

**Document: 301 Specifications for Concrete Construction**

No.	Public Commenter Name	Provision No.	Public Comment	Response
1.	Eric A. Carleton	General	<p>The National Precast Concrete Association (NPCA) supports the ACI mission to develop excellent standards to improve the safety, design, installation and research of concrete structures. We applaud ACI's efforts to bring in a diverse group of associations, engineers, academics and contractors to provide current information and to bring it to the forefront within the published ACI codes, standards and guides. Principal among these contributions has been the valued input from the Precast/Prestress Concrete Institute (PCI) within ACI Committee 301 Specifications for Structural Concrete, specifically within Section 13 Precast Structural Concrete and Section 14 Precast Architectural Concrete.</p> <p>For more than 20 years within the marketplace, both NPCA and PCI have provided widely recognized and accepted third party precast plant certification programs for the variety of precast concrete products manufactured by those plants. For some jurisdictions, this has led to some confusion regarding which certification program is most appropriate for the product in question or if both certification programs independently can be specified.</p> <p>For the past few years the Boards of Directors of both the NPCA and PCI have been meeting jointly to develop a document that provides importance guidance. On <u>December 23, 2019, an agreement was reached</u> that announced the <u>Joint Concrete Product List (JCPL-19)</u>. This document provides clarity to owners, designers and contractors as to the appropriate plant certification program [NPCA, PCI or both] for the precast product in question. In light of this recent development that clarifies these two viable plant certification programs for many of the products included under sections 13 and 14, the National Precast Concrete Association requests that the ANSI-accredited NPCA Plant Certification Program be added to the proposed ACI 301-20 Specifications for Concrete Construction. Suggested wording to provide this more inclusive specification requirement is included within this form.</p>	<p><b>Partially Accepted.</b></p> <p><b>Add in 13.1.4.2</b> <b>OPTIONAL</b> Specify if different fabricator qualifications are allowed. <u>The National Precast Concrete Association (NPCA) may provide an alternative certification program applicable to some structural precast concrete products, except those which are prestressed.</u></p> <p><b>Add in 14.1.3.7</b> Specify alternative acceptable fabricator qualifications. <u>The National Precast Concrete Association (NPCA) may provide an alternative certification program applicable to some structural precast concrete products, except those which are prestressed.</u></p> <p>The rest will be taken as new business.</p>
2.	Kelly Patterson	General	<p>Previous 301 codes and now again this proposed 2020 code the precast concrete Sections 13 Precast Structural, and 14 Precast Architectural, include provisions which require fabricators of these product to be a PCI certified plant. This is very restrictive and precludes an NPCA certified precaster to produce or provide any products for these projects.</p> <p>Typically, a prestressed or architectural precast product would require PCI certification, but not many other precast products on these projects. By having this restriction in 301, it requires time consuming efforts by all involved to allow the 'other' products which can include the underground utilities, stair treads, wall panels, retaining walls, grease interceptors, etc.</p> <p>The change from 'PCI' to 'PCI or NPCA' certification will eliminate this hurdle.</p>	<p><b>Partially Accepted.</b></p> <p><b>Add in 13.1.4.2</b> <b>OPTIONAL</b> Specify if different fabricator qualifications are allowed. <u>The National Precast Concrete Association (NPCA) may provide an alternative certification program applicable to some structural precast concrete products, except those which are prestressed.</u></p> <p><b>Add in 14.1.3.7</b> Specify alternative acceptable fabricator qualifications. <u>The National Precast Concrete Association (NPCA) may provide an alternative certification program applicable to some structural precast concrete products, except those which are prestressed.</u></p> <p>The rest will be taken as new business.</p>
3.	Greg Moody	1.3	Add definition of "point of delivery". Some consider the point of delivery at the discharge fo the mixer truck, others at the end of the hose or we a "buggy" delivers the concrete on site.	<b>Accepted.</b>
4.	Greg Moody	1.3 required	Can we use another word than "required" to define "required"?	<b>Not Accepted.</b> The definition defines the scope for which the word required is used in this document.

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5.	Richard S. Phillips, Vulcan Materials	1.4.1.2	ASTM C1260 is not listed with the ASTM standards although that test method is referenced later in 4.2.2.6	<b>Accepted.</b>
6.	Greg Moody	1.1.6 (j)	Remove "(Underwriter Laboratories [UL] designs)" since other fire safety is also not in scope of work	<b>Accepted.</b>
7.	Nicholas J. Carino	1.6.1	Editorial: The use of "and/or" in a specification is not recommended. The minimum requirement is to have one presentative for the Owner, so change to "or".	<b>Accepted.</b>
8.	Nicholas J. Carino	1.7.3.1	Editorial: Remove "the" before "certification."	<b>Accepted.</b>
9.	Greg Moody	1.7.3.3 (d)	Which dominates, 150 yd <sup>3</sup> or 5000 ft <sup>2</sup> ?	<b>Not Accepted.</b> The term "at least" means that it is the lesser of 150 cy or 5000 sf. Language is consistent with ACI 318-19.
10.	Greg Moody	1.7.3.3 (d)	Change "Sampled concrete used to mold strength test specimens" to "Sampled concrete used to mold strength test specimens <b>for acceptance</b> "	<b>Not Accepted.</b> All strengths tests performed by the Owner's Testing Agency should meet the requirements of this section. There is a definition for strength tests for acceptance.
11.	Nicholas J. Carino	1.8.5.1(a)	Editorial: It should refer to 1.7.6.1(b).	<b>Accepted.</b>
12.	Nicholas J. Carino	1.8.5.2(e)	Editorial: This part of the specification deals with durability related problems, so should the words "strength-deficient" be "durability-deficient" as used in the previous provision?	<b>Accepted.</b>
13.	Nicholas J. Carino	2.2.3	Editorial: The provision deals with "fabrication of joints" rather than the general topic of "fabrication". There are other provisions that deal with fabrication of formwork. I think this heading should be removed and provision 2.2.3.1 should be numbered 2.2.2.8	<b>Accepted.</b>
14.	D. Janssen	1.7.8.1	What is a "transportation unit"? Is this a ready-mix concrete truck? Is this a concrete pump? Clarify, as the measured air content can vary significantly between discharge from a ready-mix truck and discharge from the end of a pump line when the concrete experiences high pressures in the pump line.	<b>Accepted.</b>
15.	Nicholas J. Carino	2.3.2.1	New business: This provision seems to be the same as 2.3.2.3. Please review these two provisions to see if they are both needed. If they are, the distinction between the two should be made clearer and 2.3.2.1 would need wording related to curing of the surface.	<b>New business.</b>
16.	Nicholas J. Carino	2.3.2.2	Editorial: I believe this provision deals with formed sloping surfaces and that could be clarified by revising as follows: "If formed <u>sloping surfaces</u> require finishing, remove top forms <del>on sloping surfaces of concrete</del> as soon as removal will not allow concrete to sag."	<b>Accepted.</b>
17.	Nicholas J. Carino	2.3.2.4	Editorial: In the checklist entry, the words "and construction loads" should be added to be consistent with the specification: "...supporting the weight of concrete <u>and construction loads</u> if different from..."	<b>Accepted.</b>
18.	Nicholas J. Carino	3.1.2.4	Editorial: The checklist entry can be written more concisely: "Specify alternative type <u>and grade</u> of steel for headed reinforcing bars: (a) Carbon-steel (ASTM A615/A615M), <del>also specify grade.</del> (b) Low-alloy steel (ASTM A706/A706M), <del>also specify grade.</del>	<b>Accepted.</b>
19.	Nicholas J. Carino	3.3.2.3(e)	The checklist entry is not consistent with the specification. The provision deals with cover for headed shear reinforcement but the checklist includes headed reinforcing bars. The checklist should be revised: "Specify the cover for headed shear stud reinforcement <del>and headed reinforcing bars.</del> "	<b>Accepted.</b>
20.	Todd Hawkinson	3.3.2.5	In a previous cycle, the committee balloted a change to include the reference to CRSI RB4.1 and incorporate a <i>placing tolerance</i> . During the public review balloting, the tolerance was deleted and unnecessarily inserted a restrictive support spacing limitation for wire sizes less than W4.0/D4.0 WWF. The tolerance should be re-inserted and the spacing limitation should be removed until testing can define a set limit.  <b>3.3.2.5 Welded wire reinforcement-</b> Support welded wire reinforcement according to CRSI RB4.1 to maintain positioning during concrete placement.	<b>New Business.</b>
21.	Christopher John	3.3.2.5(a)	Section 3.3.2.5 (a) contains prescriptive language on bar support spacing below WWR that needs to be removed. The provision should focus on placement in accordance with concrete cover requirements defined in ACI 318 and within the allowable placement tolerances permitted by ACI 117. Suggested wording is:  <i>Welded wire reinforcement in slabs on composite steel deck and slabs on ground-</i> Reinforcement shall be placed into position prior to concrete placement. Unless otherwise specified, do not extend welded wire reinforcement through movement joints. Place reinforcement as indicated in Contract Documents. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12in.</del> Reinforcement specified to satisfy sectional strength, shrinkage & temperature, and/or	<b>New Business.</b>

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			<u>prescriptive minimum reinforcing requirements of ACI 318 shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Slab designs for which ACI 318 methods are not applicable shall be accompanied by project-specific placement requirements and permissible placement tolerances defined on the Contract Documents.</u> Reinforcement nearest edge of slab shall be no farther from edge of slab than greater of specified cover or 2 in. Unless otherwise specified, overlap parallel wires at edges of reinforcement not less than 2 in.	
22.	Joshua Carney, P.E	3.3.2.5(a)	<p>The current specification regarding support placement at 12" o.c.is very restrictive and not in my view based on rigorous testing validating the need. It will unnecessarily create an incentive to use heavier reinforcing than needed simply to simplify the support spacing. The language noted below is more logical and allows for reasonable tolerances for field conditions. It would be almost impossible to police the spacing requirement in the field regardless and creates a rather arbitrary requirement that will not advance the use of concrete on projects or improve building safety and performance.</p> <p><b>3.3.2.5(a) Welded wire reinforcement in slabs on composite steel deck and slabs on ground-</b> Reinforcement shall be placed into position prior to concrete placement. Unless otherwise specified, do not extend welded wire reinforcement through movement joints. Place reinforcement as indicated in Contract Documents. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12in.</del> Where reinforcement is specified as temperature, shrinkage and/or minimum reinforcement in accordance with ACI 318, unless noted otherwise, place within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Reinforcement nearest edge of slab shall be no farther from edge of slab than greater of specified cover or 2 in. Unless otherwise specified, overlap parallel wires at edges of reinforcement not less than 2 in.</p>	<b>New Business.</b>
23.	Barbara Kibler	3.3.2.5(a)	<p><del>Welded wire reinforcement in slabs on composite steel deck and slabs on ground-</del> Reinforcement shall be placed into position prior to concrete placement. Unless otherwise specified, do not extend welded wire reinforcement through movement joints. Place reinforcement as indicated in Contract Documents. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12in.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or <u>prescriptive minimum reinforcing requirements of ACI 318 shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Slab designs for which ACI 318 methods are not applicable shall be accompanied by project-specific placement requirements and permissible placement tolerances defined on the Contract Documents.</u> Reinforcement nearest edge of slab shall be no farther from edge of slab than greater of specified cover or 2 in. Unless otherwise specified, overlap parallel wires at edges of reinforcement not less than 2 in.</p>	<b>New Business.</b>
24.	Blake Oaks	3.3.2.5(a)	<p><del>Welded wire reinforcement in slabs on composite steel deck and slabs on ground-</del> Reinforcement shall be placed into position prior to concrete placement. Unless otherwise specified, do not extend welded wire reinforcement through movement joints. Place reinforcement as indicated in Contract Documents. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12in.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or <u>prescriptive minimum reinforcing requirements of ACI 318 shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Slab designs for which ACI 318 methods are not applicable shall be accompanied by project-specific placement requirements and permissible placement tolerances defined on the Contract Documents.</u> Reinforcement nearest edge of slab shall be no farther from edge of slab than greater of specified cover or 2 in. Unless otherwise specified, overlap parallel wires at edges of reinforcement not less than 2 in.</p>	<b>New Business.</b>
25.	Dennis Fontenot	3.3.2.5(a)	<p>Section 3.3.2.5(a) contains prescriptive language on bar support spacing below WWR that needs to be removed. The provision should focus on placement in accordance with concrete cover requirements defined in ACI 318 and within the allowable placement tolerances permitted by ACI 117. Suggested wording is:</p> <p><del>Welded wire reinforcement in slabs on composite steel deck and slabs on ground-</del> Reinforcement shall be placed into position prior to concrete placement. Unless otherwise specified, do not extend welded wire reinforcement through movement joints. Place reinforcement as indicated in Contract Documents. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12in.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or <u>prescriptive minimum reinforcing requirements of ACI 318 shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Slab designs for which ACI 318 methods are not applicable shall be accompanied by project-specific placement requirements and permissible placement tolerances defined on the Contract Documents.</u> Reinforcement nearest edge of slab shall be no farther from edge of slab than greater of specified cover or 2 in. Unless otherwise specified, overlap parallel wires at edges of reinforcement not less than 2 in.</p>	<b>New Business.</b>

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26.	Jeff L. Chilton	3.3.2.5(a)	<p>Section 3.3.2.5(a) contains prescriptive language on bar support spacing below WWR that needs to be removed. The provision should focus on placement in accordance with concrete cover requirements defined in ACI 318 and within the allowable placement tolerances permitted by ACI 117. Suggested wording is:</p> <p><i>Welded wire reinforcement in slabs on composite steel deck and slabs on ground-</i> Reinforcement shall be placed into position prior to concrete placement. Unless otherwise specified, do not extend welded wire reinforcement through movement joints. Place reinforcement as indicated in Contract Documents. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12in.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318 shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Slab designs for which ACI 318 methods are not applicable shall be accompanied by project-specific placement requirements and permissible placement tolerances defined on the Contract Documents. Reinforcement nearest edge of slab shall be no farther from edge of slab than greater of specified cover or 2 in. Unless otherwise specified, overlap parallel wires at edges of reinforcement not less than 2 in.</p>	New Business.
27.	Mark Agee	3.3.2.5(a)	<p><i>Welded wire reinforcement in slabs on composite steel deck and slabs on ground-</i> Reinforcement shall be placed into position prior to concrete placement. Unless otherwise specified, do not extend welded wire reinforcement through movement joints. Place reinforcement as indicated in Contract Documents. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12in.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318 shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Slab designs for which ACI 318 methods are not applicable shall be accompanied by project-specific placement requirements and permissible placement tolerances defined on the Contract Documents. Reinforcement nearest edge of slab shall be no farther from edge of slab than greater of specified cover or 2 in. Unless otherwise specified, overlap parallel wires at edges of reinforcement not less than 2 in.</p>	New Business.
28.	Rodney Patrick	3.3.2.5(a)	<p>Section 3.3.2.5(a) contains prescriptive language on bar support spacing below WWR that needs to be removed. The provision should focus on placement in accordance with concrete cover requirements defined in ACI 318 and within the allowable placement tolerances permitted by ACI 117. Suggested wording is:</p> <p><i>Welded wire reinforcement in slabs on composite steel deck and slabs on ground-</i> Reinforcement shall be placed into position prior to concrete placement. Unless otherwise specified, do not extend welded wire reinforcement through movement joints. Place reinforcement as indicated in Contract Documents. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12in.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318 shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Slab designs for which ACI 318 methods are not applicable shall be accompanied by project-specific placement requirements and permissible placement tolerances defined on the Contract Documents. Reinforcement nearest edge of slab shall be no farther from edge of slab than greater of specified cover or 2 in. Unless otherwise specified, overlap parallel wires at edges of reinforcement not less than 2 in.</p>	New Business.
29.	Scott Clymire	3.3.2.5(a)	<p><i>Welded wire reinforcement in slabs on composite steel deck and slabs on ground-</i> Reinforcement shall be placed into position prior to concrete placement. Unless otherwise specified, do not extend welded wire reinforcement through movement joints. Place reinforcement as indicated in Contract Documents. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12in.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318 shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Slab designs for which ACI 318 methods are not applicable shall be accompanied by project-specific placement requirements and permissible placement tolerances defined on the Contract Documents. Reinforcement nearest edge of slab shall be no farther from edge of slab than greater of specified cover or 2 in. Unless otherwise specified, overlap parallel wires at edges of reinforcement not less than 2 in.</p>	New Business.
30.	Amanda Shoemaker	3.3.2.5(a)	<p><i>Welded wire reinforcement in slabs on composite steel deck and slabs on ground-</i> Reinforcement shall be placed into position prior to concrete placement. Unless otherwise specified, do not extend welded wire reinforcement through movement joints. Place reinforcement as indicated in Contract Documents. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12in.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318 shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Slab designs for which ACI 318 methods are not applicable shall be accompanied by project-specific placement requirements and permissible placement tolerances defined on</p>	New Business.

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			the Contract Documents. Reinforcement nearest edge of slab shall be no farther from edge of slab than greater of specified cover or 2 in. Unless otherwise specified, overlap parallel wires at edges of reinforcement not less than 2 in.	
31.	Eric Kraeutle (Harris Rebar)	3.3.2.5(a)	<i>Welded wire reinforcement in slabs on composite steel deck and slabs on ground-</i> Reinforcement shall be placed into position prior to concrete placement. Unless otherwise specified, do not extend welded wire reinforcement through movement joints. Place reinforcement as indicated in Contract Documents. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12in.</del> Reinforcement specified to satisfy sectional strength, shrinkage & temperature, and/or prescriptive minimum reinforcing requirements of ACI 318 shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Slab designs for which ACI 318 methods are not applicable shall be accompanied by project-specific placement requirements and permissible placement tolerances defined on the Contract Documents. Reinforcement nearest edge of slab shall be no farther from edge of slab than greater of specified cover or 2 in. Unless otherwise specified, overlap parallel wires at edges of reinforcement not less than 2 in.	New Business.
32.	Lane Wagenfuehr	3.3.2.5(a)	Section 3.3.2.5(a) contains prescriptive language on bar support spacing below WWR that needs to be removed. The provision should focus on placement in accordance with concrete cover requirements defined in ACI 318 and within the allowable placement tolerances permitted by ACI 117. Suggested wording is:  <i>Welded wire reinforcement in slabs on composite steel deck and slabs on ground-</i> Reinforcement shall be placed into position prior to concrete placement. Unless otherwise specified, do not extend welded wire reinforcement through movement joints. Place reinforcement as indicated in Contract Documents. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12in.</del> Reinforcement specified to satisfy sectional strength, shrinkage & temperature, and/or prescriptive minimum reinforcing requirements of ACI 318 shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Slab designs for which ACI 318 methods are not applicable shall be accompanied by project-specific placement requirements and permissible placement tolerances defined on the Contract Documents. Reinforcement nearest edge of slab shall be no farther from edge of slab than greater of specified cover or 2 in. Unless otherwise specified, overlap parallel wires at edges of reinforcement not less than 2 in.	New Business.
33.	Augusta Gaertner	3.3.2.5(a)	In the previous cycle, the committee balloted a change to include the reference to CRSI RB4.1 and incorporate a <i>placing tolerance</i> . During the public review balloting, the tolerance was deleted and unnecessarily inserted a restrictive support spacing limitation for wire sizes less than W4.0/D4.0 WWF. The tolerance should be re-inserted and the spacing limitation should be removed until testing can define a set limit.  <b>3.3.2.5(a)</b> <i>Welded wire reinforcement in slabs on composite steel deck and slabs on ground-</i> Reinforcement shall be placed into position prior to concrete placement. Unless otherwise specified, do not extend welded wire reinforcement through movement joints. Place reinforcement as indicated in Contract Documents. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12in.</del> <del>Where reinforcement is specified as temperature, shrinkage and/or minimum reinforcement in accordance with ACI 318, unless noted otherwise, place within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117.</del> Reinforcement nearest edge of slab shall be no farther from edge of slab than greater of specified cover or 2 in. Unless otherwise specified, overlap parallel wires at edges of reinforcement not less than 2 in.	New Business.
34.	Paul Aubee	3.3.2.5(a)	Propose change in language as follows:  <i>Welded wire reinforcement in slabs on composite steel deck and slabs on ground-</i> Reinforcement shall be placed into position prior to concrete placement. Unless otherwise specified, do not extend welded wire reinforcement through movement joints. Place reinforcement as indicated in Contract Documents. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12in.</del> Reinforcement specified to satisfy sectional strength, shrinkage & temperature, and/or prescriptive minimum reinforcing requirements of ACI 318 shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Slab designs for which ACI 318 methods are	New Business.

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			<p><b>not applicable shall be accompanied by project-specific placement requirements and permissible placement tolerances defined on the Contract Documents.</b> Reinforcement nearest edge of slab shall be no farther from edge of slab than greater of specified cover or 2 in. Unless otherwise specified, overlap parallel wires at edges of reinforcement not less than 2 in.</p> <p>Justification:</p> <p>Mandating a support spacing in ACI 301 does not guarantee conformance with a project’s specified acceptable tolerance, nor does it allow for alternative support patterns or methods that would achieve conforming results. Support spacing should be derived on a case-by-case basis with due consideration for attributes such as the reinforcement itself (type, size, and spacing), the intended function/performance of the reinforced concrete element, the selected chair/bolster type, and the subsurface on which the support rests, just to name a few. Language referring to explicitly defined support spacing should be deleted. Pre-established tolerances – whether through a combination of ACI 318 and ACI 117 or through a design professional’s project-specific requirements – should govern placement of welded wire reinforcement.</p>	
35.	John Dean	3.3.2.5(a)	<p><i>Welded wire reinforcement in slabs on composite steel deck and slabs on ground-</i> Reinforcement shall be placed into position prior to concrete placement. Unless otherwise specified, do not extend welded wire reinforcement through movement joints. Place reinforcement as indicated in Contract Documents. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12in.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318 shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Slab designs for which ACI 318 methods are not applicable shall be accompanied by project-specific placement requirements and permissible placement tolerances defined on the Contract Documents. Reinforcement nearest edge of slab shall be no farther from edge of slab than greater of specified cover or 2 in. Unless otherwise specified, overlap parallel wires at edges of reinforcement not less than 2 in.</p>	New Business.
36.	Keith Smith (Harris Davis Rebar)	3.3.2.5(a)	<p><i>Welded wire reinforcement in slabs on composite steel deck and slabs on ground-</i> Reinforcement shall be placed into position prior to concrete placement. Unless otherwise specified, do not extend welded wire reinforcement through movement joints. Place reinforcement as indicated in Contract Documents. Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318 shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Slab designs for which ACI 318 methods are not applicable shall be accompanied by project specific placement requirements and permissible placement tolerances defined on the Contract Documents. Reinforcement nearest edge of slab shall be no farther from edge of slab than greater of specified cover or 2 in. Unless otherwise specified, overlap parallel wires at edges of reinforcement not less than 2 in.</p>	New Business.
37.	Todd Hawkinson	3.3.2.5(a)	<p><b>3.3.2.5(a)</b> <i>Welded wire reinforcement in slabs on composite steel deck and slabs on ground-</i> Reinforcement shall be placed into position prior to concrete placement. Unless otherwise specified, do not extend welded wire reinforcement through movement joints. Place reinforcement as indicated in Contract Documents. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12in.</del> Where reinforcement is specified as temperature, shrinkage and/or minimum reinforcement in accordance with ACI 318, unless noted otherwise, place within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Reinforcement nearest edge of slab shall be no farther from edge of slab than greater of specified cover or 2 in. Unless otherwise specified, overlap parallel wires at edges of reinforcement not less than 2 in.</p>	New Business.
38.	Barbara Kibler	3.3.2.5(b)	<p><i>Welded wire reinforcement in elevated formed slabs, slabs on noncomposite steel deck, and members not covered in 3.3.2.5.a - Use sheets of welded wire reinforcement. Place and support reinforcement before concrete placement to maintain location within tolerances indicated for nonprestressed reinforcement in ACI 117. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12" perpendicular to the direction of span.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318, unless otherwise explicitly defined on the Contract Documents, shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Lap splice edges and ends of welded wire reinforcement sheets as indicated in Contract Documents.</i></p>	New Business.

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39.	Keith Smith (Harris Davis Rebar)	3.3.2.5(b)	Welded wire reinforcement in elevated formed slabs, slabs on noncomposite steel deck, and members not covered in 3.3.2.5.a - Use sheets of welded wire reinforcement. Place and support reinforcement before concrete placement to maintain location within tolerances indicated for nonprestressed reinforcement in ACI 117. <u>Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318, unless otherwise explicitly defined on the Contract Documents, shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117.</u> Lap splice edges and ends of welded wire reinforcement sheets as indicated in Contract Documents.	New Business.
40.	Blake Oaks	3.3.2.5(b)	<i>Welded wire reinforcement in elevated formed slabs, slabs on noncomposite steel deck, and members not covered in 3.3.2.5.a - Use sheets of welded wire reinforcement. Place and support reinforcement before concrete placement to maintain location within tolerances indicated for nonprestressed reinforcement in ACI 117. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12" perpendicular to the direction of span.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318, unless otherwise explicitly defined on the Contract Documents, shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Lap splice edges and ends of welded wire reinforcement sheets as indicated in Contract Documents.</i>	New Business.
41.	Eric Kraeutle (Harris Rebar)	3.3.2.5(b)	<i>Welded wire reinforcement in elevated formed slabs, slabs on noncomposite steel deck, and members not covered in 3.3.2.5.a - Use sheets of welded wire reinforcement. Place and support reinforcement before concrete placement to maintain location within tolerances indicated for nonprestressed reinforcement in ACI 117. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12" perpendicular to the direction of span.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318, unless otherwise explicitly defined on the Contract Documents, shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Lap splice edges and ends of welded wire reinforcement sheets as indicated in Contract Documents.</i>	New Business.
42.	Dennis Fontenot	3.3.2.5(b)	Section 3.3.2.5(b) contains prescriptive language on bar support spacing below WWR that needs to be removed. The provision should focus on placement in accordance with concrete cover requirements defined in ACI 318 and within the allowable placement tolerances permitted by ACI 117. Suggested wording is:  <i>Welded wire reinforcement in elevated formed slabs, slabs on noncomposite steel deck, and members not covered in 3.3.2.5.a - Use sheets of welded wire reinforcement. Place and support reinforcement before concrete placement to maintain location within tolerances indicated for nonprestressed reinforcement in ACI 117. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12" perpendicular to the direction of span.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318, unless otherwise explicitly defined on the Contract Documents, shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Lap splice edges and ends of welded wire reinforcement sheets as indicated in Contract Documents.</i>	New Business.
43.	Jeff L. Chilton	3.3.2.5(b)	Section 3.3.2.5(b) contains prescriptive language on bar support spacing below WWR that needs to be removed. The provision should focus on placement in accordance with concrete cover requirements defined in ACI 318 and within the allowable placement tolerances permitted by ACI 117. Suggested wording is:  <i>Welded wire reinforcement in elevated formed slabs, slabs on noncomposite steel deck, and members not covered in 3.3.2.5.a - Use sheets of welded wire reinforcement. Place and support reinforcement before concrete placement to maintain location within tolerances indicated for nonprestressed reinforcement in ACI 117. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12" perpendicular to the direction of span.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318, unless otherwise explicitly defined on the Contract Documents, shall be placed within the specified concrete cover requirements of</i>	New Business.

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			<i>ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Lap splice edges and ends of welded wire reinforcement sheets as indicated in Contract Documents.</i>	
44.	Mark Agee	3.3.2.5(b)	<p>Welded wire reinforcement in elevated formed slabs, slabs on noncomposite steel deck, and members not covered in 3.3.2.5.a - Use sheets of welded wire reinforcement. Place and support reinforcement before concrete placement to maintain location within tolerances indicated for nonprestressed reinforcement in ACI 117. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12" perpendicular to the direction of span.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318, unless otherwise explicitly defined on the Contract Documents, shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Lap splice edges and ends of welded wire reinforcement sheets as indicated in Contract Documents.</p>	New Business.
45.	Rodney Patrick	3.3.2.5(b)	<p>Section 3.3.2.5(b) contains prescriptive language on bar support spacing below WWR that needs to be removed. The provision should focus on placement in accordance with concrete cover requirements defined in ACI 318 and within the allowable placement tolerances permitted by ACI 117. Suggested wording is:</p> <p>Welded wire reinforcement in elevated formed slabs, slabs on noncomposite steel deck, and members not covered in 3.3.2.5.a - Use sheets of welded wire reinforcement. Place and support reinforcement before concrete placement to maintain location within tolerances indicated for nonprestressed reinforcement in ACI 117. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12" perpendicular to the direction of span.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318, unless otherwise explicitly defined on the Contract Documents, shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Lap splice edges and ends of welded wire reinforcement sheets as indicated in Contract Documents.</p>	New Business.
46.	Scott Clymire	3.3.2.5(b)	<p>Welded wire reinforcement in elevated formed slabs, slabs on noncomposite steel deck, and members not covered in 3.3.2.5.a - Use sheets of welded wire reinforcement. Place and support reinforcement before concrete placement to maintain location within tolerances indicated for nonprestressed reinforcement in ACI 117. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12" perpendicular to the direction of span.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318, unless otherwise explicitly defined on the Contract Documents, shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Lap splice edges and ends of welded wire reinforcement sheets as indicated in Contract Documents.</p>	New Business.
47.	Amanda Shoemaker	3.3.2.5(b)	<p>Welded wire reinforcement in elevated formed slabs, slabs on noncomposite steel deck, and members not covered in 3.3.2.5.a - Use sheets of welded wire reinforcement. Place and support reinforcement before concrete placement to maintain location within tolerances indicated for nonprestressed reinforcement in ACI 117. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12" perpendicular to the direction of span.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318, unless otherwise explicitly defined on the Contract Documents, shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Lap splice edges and ends of welded wire reinforcement sheets as indicated in Contract Documents.</p>	New Business.
48.	Lane Wagenfuehr	3.3.2.5(b)	<p>Section 3.3.2.5(b) contains prescriptive language on bar support spacing below WWR that needs to be removed. The provision should focus on placement in accordance with concrete cover requirements defined in ACI 318 and within the allowable placement tolerances permitted by ACI 117. Suggested wording is:</p> <p>Welded wire reinforcement in elevated formed slabs, slabs on noncomposite steel deck, and members not covered in 3.3.2.5.a - Use sheets of welded wire reinforcement. Place and support reinforcement before concrete placement to maintain location within tolerances indicated for nonprestressed reinforcement in ACI 117. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12" perpendicular to the direction of span.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318, unless otherwise explicitly defined on the Contract Documents, shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Lap splice edges and ends of welded wire reinforcement sheets as indicated in Contract Documents.</p>	New Business.



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49.	Augusta Gaertner	3.3.2.5(b)	<p>In the previous cycle, the committee balloted a change to include the reference to CRSI RB4.1 and incorporate a <i>placing tolerance</i>. During the public review balloting, the tolerance was deleted and unnecessarily inserted a restrictive support spacing limitation for wire sizes less than W4.0/D4.0 WWF. The tolerance should be re-inserted and the spacing limitation should be removed until testing can define a set limit.</p> <p><b>3.3.2.5(b)</b> <i>Welded wire reinforcement in elevated formed slabs, slabs on noncomposite steel deck, and members not covered in 3.3.2.5.a - Use sheets of welded wire reinforcement. Place and support reinforcement before concrete placement to maintain location within tolerances indicated for nonprestressed reinforcement in ACI 117. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12" perpendicular to the direction of span.</del> Where reinforcement is specified as temperature, shrinkage and/or minimum reinforcement in accordance with ACI 318, unless noted otherwise, place within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117.</i> Lap splice edges and ends of welded wire reinforcement sheets as indicated in Contract Documents.</p>	New Business.
50.	Paul Aubee	3.3.2.5(b)	<p>Propose change in language as follows:</p> <p>Welded wire reinforcement in elevated formed slabs, slabs on noncomposite steel deck, and members not covered in 3.3.2.5.a - Use sheets of welded wire reinforcement. <del>Place and support reinforcement before concrete placement to maintain location within tolerances indicated for nonprestressed reinforcement in ACI 117. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12" perpendicular to the direction of span.</del></del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318, unless otherwise explicitly defined on the Contract Documents, shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Lap splice edges and ends of welded wire reinforcement sheets as indicated in Contract Documents.</p> <p>Justification: see remarks for 3.3.2.5(a).</p>	New Business.
51.	Todd Hawkinson	3.3.2.5(b)	<p><b>3.3.2.5(b)</b> <i>Welded wire reinforcement in elevated formed slabs, slabs on noncomposite steel deck, and members not covered in 3.3.2.5.a - Use sheets of welded wire reinforcement. Place and support reinforcement before concrete placement to maintain location within tolerances indicated for nonprestressed reinforcement in ACI 117. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12" perpendicular to the direction of span.</del> Where reinforcement is specified as temperature, shrinkage and/or minimum reinforcement in accordance with ACI 318, unless noted otherwise, place within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117.</i> Lap splice edges and ends of welded wire reinforcement sheets as indicated in Contract Documents.</p>	New Business.
52.	John Dean	3.3.2.5(b)	<p><i>Welded wire reinforcement in elevated formed slabs, slabs on noncomposite steel deck, and members not covered in 3.3.2.5.a - Use sheets of welded wire reinforcement. Place and support reinforcement before concrete placement to maintain location within tolerances indicated for nonprestressed reinforcement in ACI 117. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12" perpendicular to the direction of span.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318, unless otherwise explicitly defined on the Contract Documents, shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Lap splice edges and ends of welded wire reinforcement sheets as indicated in Contract Documents.</i></p>	New Business.
53.	Christopher John	3.3.2.5(b)	<p>Section 3.3.2.5 (b) contains prescriptive language on bar support spacing below WWR that needs to be removed. The provision should focus on placement in accordance with concrete cover requirements defined in ACI 318 and within the allowable placement tolerances permitted by ACI 117. Suggested wording is:</p> <p><i>Welded wire reinforcement in elevated formed slabs, slabs on noncomposite steel deck, and members not covered in 3.3.2.5.a - Use sheets of welded wire reinforcement. Place and support reinforcement before concrete placement to maintain location within tolerances indicated for nonprestressed reinforcement in ACI 117. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12" perpendicular to the direction of span.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318, unless otherwise explicitly</i></p>	New Business.

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			<i>defined on the Contract Documents, shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Lap splice edges and ends of welded wire reinforcement sheets as indicated in Contract Documents.</i>	
54.	Joshua Carney, P.E	3.3.2.5(b)	<p>The current specification regarding support placement at 12" o.c.is very restrictive and not in my view based on rigorous testing validating the need. It will unnecessarily create an incentive to use heavier reinforcing than needed simply to simplify the support spacing. The language noted below is more logical and allows for reasonable tolerances for field conditions. It would be almost impossible to police the spacing requirement in the field regardless and creates a rather arbitrary requirement that will not advance the use of concrete on projects or improve building safety and performance.</p> <p>3.3.2.5(b) Welded wire reinforcement in elevated formed slabs, slabs on noncomposite steel deck, and members not covered in 3.3.2.5.a - Use sheets of welded wire reinforcement. Place and support reinforcement before concrete placement to maintain location within tolerances indicated for nonprestressed reinforcement in ACI 117. Where reinforcement is specified as temperature, shrinkage and/or minimum reinforcement in accordance with ACI 318, unless noted otherwise, place within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Lap splice edges and ends of welded wire reinforcement sheets as indicated in Contract Documents.</p>	<b>New Business.</b>
55.	Nicholas J. Carino	3.3.2.5(b)	<p>Are the words "and members not covered in 3.3.2.5(a )" needed in the title? What would be lost if the words were deleted? "Welded wire reinforcement in elevated formed slabs, <u>and</u> slabs on noncomposite steel deck, <del>and members not covered in 3.3.2.5(a )</del>"</p> <p>For clarity the checklist entry should be expanded as follows: "Specify method of lapping at edges and ends of wire reinforcement for elevated formed slabs and slabs on noncomposite steel deck."</p>	<b>New Business.</b>
56.	Nicholas J. Carino	3.3.2.8	<p>Editorial: The provision can be written more concisely: "<u>Do not</u> field bending of reinforcing bars partially embedded in concrete <del>shall not be permitted</del>, unless otherwise specified.</p>	<b>Accepted.</b>
57.	Jasper Stem, Jr. North Carolina Aggregates Association	4.1.2.3 (b) and 4.2.2.6 (a)	<p>The requirement for the sole use of ASTM C1293 to evaluate ASR is not consistent with current industry practice or desirable for the aggregate industry. The extended test time requirement for ASTM C1293 makes it ineffective for timely response to concrete projects and ineffective for management of potential reactivity in aggregate sources. Inherent variability in the C1293 test procedure, combined with the time delay in obtaining results could also result in significant liability for concrete producers supplying to projects if test results change from innocuous to potential reactive from test to test. Suggest referencing ASTM C1778 in lieu of simply requiring C1293. This would allow the use of C1260 and other, timelier, measures.</p>	<p><b>Partially Accepted.</b> C1293 has been part of ACI 301 for four years and should, in this time, be a part of industry practice. Aggregate suppliers have had time in these four years to develop C1293 data that would be available for submittals. C1293 is not a quick test and this is a concern for management of changes in reactivity within a quarry, but according to C1778, C1293 is the most accurate test method. C 1260, the alternative, is a much quicker test but is not always accurate (can give false negatives and false positives). There are variabilities in many (all) ASTM tests. This should not result in an increased liability to producers.</p> <p>Change as follows: <b>4.1.2.3(b)</b> For aggregates: types, sizes, pit or quarry locations, producers' names, aggregate supplier statement of compliance with ASTM C33/C33M, <u>and unless otherwise specified</u>, ASTM C1293 expansion data not more than 24 months old.</p> <p><b>OPTIONAL</b> <u>Specify alternative requirements for evaluating potential alkali- silica reactivity of aggregates. Refer to ASTM C1778.</u></p> <p>4.2.2.5(a) <b>OPTIONAL</b> Specify alternative requirements for <u>evaluating the potential reactivity of aggregates or for</u> mitigating alkali-silica</p>

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				reaction (ASR).
58.	Richard S. Phillips, Vulcan Materials	4.1.2.3	Implies that passing ASTM C1293 test results less than 24 months old are the only acceptable results for submittal; this is not in concert with 4.2.2.6 which lists 3 viable options for demonstrating durability. The provision should be revised to require submittals demonstrate compliance using one of the three alternatives listed in 4.2.2.6.	<b>Not Accepted.</b> Option (b) requires testing by C1567. This is a test to show the constituents in the concrete mixture will mitigate ASR. This is not an aggregate test. C1260 is just a validation that this test method is reliable. C1778 is not written in mandatory language and cannot be referenced in the specification.
59.	Nicholas J. Carino	4.3.1.1	The words "certified by" needs to inserted, otherwise it can be interpreted that the equivalent program "approves" the facility. "Unless otherwise specified, concrete production facilities and delivery vehicles shall be certified by the NRMCA Program for Certification of Ready Mixed Concrete Facilities, approved by a state highway agency, or <u>certified by</u> an equivalent program that audits for conformance to requirements of ASTM C94/C94M for production and delivery." Likewise insert "certified by" in the checklist: "Specify if the ready mixed concrete production facility does not need to be certified by the NRMCA Program for Certification of Ready Mixed Concrete Production Facilities, approved by state highway agency, or <u>certified by</u> an equivalent program. NRMCA's Certification Program is in accordance with National Ready Mixed Concrete Association (2015)."	<b>Accepted.</b>
60.	D. Janssen	4.2.3.2(a)	Editorial - change "less" to "fewer" in last line.	<b>Accepted.</b>
61.	Greg Moody	4.3.2.2	Correct "90 minutes" to "1½ hours"	<b>Accepted.</b>
62.	D. Janssen	4.2.1.5	Where are Exposure Classes S1, S2 and S3 defined?	<b>Not Accepted.</b> The definitions for exposure class are in ACI 318. The A/E is directed to ACI 318 in mandatory checklist of 4.2.2.6(b).
63.	Nicholas J. Carino	4.2.1.5	Editorial: In the checklist the "%" symbol should be replaced with "percent". There are 10 other occurrences in the document. Search and replace.	<b>Accepted.</b>
64.	Nicholas J. Carino	4.2.2.4(c)	Editorial: This pertains to the checklist entry. In the first sentence "point of delivery" is used, so to be consistent the same words should be used in the last sentence: "Once the loss of air content during pumping is established, acceptance limits at the point of <del>discharge</del> <u>delivery</u> can be determined."	<b>Accepted.</b>
65.		4.2.3.4(c)(f)	No need to put a time limit on a concrete trial if materials have not changed. This is just an added cost to the producer for no good reason.	<b>Not Accepted.</b> The time limit for trial batches is stated in ACI 318 and ACI 301 needs to be consistent.
66.	Nicholas J. Carino	4.2.2.5(a)	The checklist needs an instruction to the specifier. " <u>Specify alternative minimum concrete temperature requirements. These default requirements have been excerpted are</u> from ACI 306.1."	<b>Accepted.</b>
67.	Nicholas J. Carino	4.2.2.5(b)	Editorial: The word "Temperature" should not be capitalized: Unless otherwise specified, <del>T</del> temperature of concrete as delivered shall not exceed 95°F."	<b>Accepted.</b>
68.	Richard S. Phillips, Vulcan Materials	4.2.2.6	If 1293 is the optimal data point desired, but the other options are viable alternatives this section should be revised to reflect that. Suggested language could be something along these lines: "When ASTM 1293 results less than 24 months old are available those results should be used for submittal. In situations when 1293 data are not available it is acceptable that optional data per (b) or (c) be submitted to demonstrate suitable durability."	<b>Not Accepted.</b> Option (b) requires testing by C1567. This is a test to show the constituents in the concrete mixture will mitigate ASR. This is not an aggregate test. C1260 is just a validation that this test method is reliable. C1778 is not written in mandatory language and cannot be referenced in the specification.
69.	Nicholas J. Carino	4.2.3.4(a)	By beginning the last part of the provision with the word "verify" makes this provision hard to follow. The intent is that the average of the field data shall be at least $f_{cr}'$ . Revise as follows: ".and encompassing a period of not less than 45 days, <del>verify that</del> the average of field strength tests <del>results shall equals or exceeds</del> $f_{cr}'$ ."	<b>Accepted.</b>
70.	D. Janssen	4.2.2.6(a)	Where is Exposure Class W0 defined?	<b>Not Accepted.</b> The definitions for exposure class are in ACI 318. The A/E is directed to ACI 318 in mandatory checklist of 4.2.2.6(d).
71.	Nicholas J. Carino	4.2.2.6(b)	In the optional requirements checklist, reference to Table 4.2.2.6(b) should be added to clarify the difference between this entry and the mandatory checklist entry. "Specify alternative <del>mixture</del> requirements to those in Table 4.2.2.6(b) for sulfate resistance."	<b>Accepted.</b>
72.	Nicholas J. Carino	4.2.2.6(c)	For the same reason as for 4.2.2.6(b), revise optional requirements checklist: "Specify alternative <del>mixture</del> requirements to those in Table 4.2.2.6(c) for freezing-and-thawing resistance."	<b>Accepted.</b>

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73.	Nicholas J. Carino	4.2.2.6(d)	For the same reason as for 4.2.2.6(b), revise optional requirements checklist: "Specify alternative requirements to those in Table 4.2.2.6(d) for concrete in contact with water."	Accepted.
74.	Nicholas J. Carino	Table 4.2.2.6(d)	In the third column, the referenced provision should be 4.2.2.6(a).	Accepted.
75.	Nicholas J. Carino	4.2.2.6(e)	For the same reason as for 4.2.2.6(b), revise optional requirements checklist: "Specify alternative <del>mixture</del> requirements to those in Table 4.2.2.6(e) for corrosion protection of reinforcement."	Accepted.
76.	Nicholas J. Carino	5.1.2.2(l)	The word "installing" should be added to the title because that is the type of information to be submitted. Provision 5.3.5 does not mention "methods" for installing the joints; rather, there are requirements for when and how to cut the joints. I can't provide alternative text because I don't have field knowledge about this subject. " <del>Installing</del> <u>sawed joints</u> —If sawed joints are to be installed using methods that are different from those specified in 5.3.5, submit request of the proposed methods."	Accepted.
77.	Nicholas J. Carino	5.1.2.2(m)	Editorial: The intent is to bond fresh concrete to hardened concrete. The wording can be improved for clarity: "If <u>preparation</u> methods to <del>prepare concrete</del> as needed to bond <u>hardened fresh concrete and fresh to hardened concrete</u> are different than from methods specified in 5.3.2.6(c) or 5.3.4.2(a), submit proposed methods."	Accepted.
78.	Nicholas J. Carino	5.3.2.1(b)	Editorial: Refer to the specific provision: "Concrete temperatures at delivery shall meet the requirements of 4.2.2.5(a). In the checklist, embedments need to be included: "Specify alternative minimum temperature of <u>metallic embedments and contact surfaces before placing concrete.</u> "	Accepted.
79.	Nicholas J. Carino	5.3.2.1(c)	Editorial: Refer to the specific provision: "Unless otherwise specified, concrete temperature as placed shall meet the requirements of 4.2.2.5(b)."	Accepted.
80.	Nicholas J. Carino	5.3.4.1	Editorial: Need to verify the names of the ACI certification programs. From the ACI Web site: " ACI Concrete Flatwork Technician has been renamed as ACI Concrete Flatwork Associate; ACI Concrete Flatwork Tradesman has been renamed as ACI Concrete Flatwork Finisher; and ACI Concrete Flatwork Finisher and Technician has been renamed as ACI Advanced Concrete Flatwork Finisher." So I assume this is the intent: "Unless otherwise specified, at least one finisher or finishing supervisor shall be a certified ACI <u>Flatwork Advanced Concrete Flatwork Finisher</u> or a certified ACI <u>Concrete Flatwork Technician-Associate</u> or equivalent."	Accepted.
81.	Nicholas J. Carino	5.3.4.1	Checklist entry: I don't think we are suggesting that zero certified finishers is acceptable. Revise as follows: "Specify if <del>more or fewer</del> <u>an alternative minimum number of certified flatwork concrete finishers may be required or permitted.</u> " The rest of the checklist discusses the desirability of more stringent requirements.	Accepted.
82.	Nicholas J. Carino	5.3.2.4(f)	Editorial: Can be written more clearly: "Unless otherwise specified, if placing beams, girders, or slabs monolithically with columns or walls, place horizontal elements after the underlying concrete is consolidated and <u>there is no bleed water is not</u> on the surface of vertical supporting member."	Accepted.
83.	Nicholas J. Carino	5.3.4.2(g)	The first entry in the checklist is not needed, because the checklist entry for 5.3.4.2 instructs the specifier to specify the locations of finishes if different from "unspecified": " <u>Specify location of nonslip finishes.</u> "	Accepted.
84.	Nicholas J. Carino	5.3.6.1	I think the default curing requirements include those for unformed surface in 5.3.6.2 and 5.3.6.3, and that for formed surfaces in 5.3.6.4. Revise as follows: "Unless otherwise specified, cure concrete in accordance with 5.3.6.2, <del>or 5.3.6.3, and 5.3.6.4.</del> " Make the same change to the checklist: "Specify curing methods other than 5.3.6.2, <del>or 5.3.6.3, and 5.3.6.4.</del> "	Accepted.
85.	D. Janssen	5.3.6.3(a)	While requiring a curing method that supplies additional water may be appropriate for low w/cm mixtures containing silica fume at a low level of cement replacement, this may not be appropriate for ternary mixtures that contain silica fume (especially those cast in Autumn) that are exposed to repeated cycles of freezing and thawing as well as de-icing salts (Exposure Class F3). Work by Bouzoubaâ, et al, showed that concrete treated with a curing compound showed considerably less scaling than concrete that was moist-cured for 12 days and then allowed to dry. Suggest recommending curing as described in 5.3.6.5(f) for ternary mixtures containing silica fume and subjected to Exposure Class F3 conditions.  Bouzoubaâ, N., A. Bilodeau, B. Fournier, R.D. Hooton, R. Gagné and M. Jolin, 2011, "Deicing salt scaling resistance of concrete incorporating fly ash and (or) silica fume: laboratory and field sidewalk test data" Canadian Journal of Civil Engineering, Vol. 38, pp. 373-382.	New Business.
86.	Nicholas J. Carino	5.2.1.9	New business. This provision repeats 4.2.2.4(d). The repetition is not needed, because the concrete needs to be delivered with the low air content, which is Section 4.	Accepted.
87.	Nicholas J. Carino	5.3.6.3	Editorial: In the checklist, the reference should be to 5.3.6.5, because that is where the methods are specified. "The methods specified in 5.3.6.3 <del>are</del> <u>are for final curing of unformed concrete surfaces,...</u> "	Accepted.

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88.	Nicholas J. Carino	5.3.7.2	The checklist entry does not match the specification. The specification states: "Unless otherwise specified, patch tie holes." The checklist says to specify ties that do not require patching. Consider revising as follows: "Specify <u>if tie holes do not have to be patched or specify</u> alternative types of ties that do not require patching of tie holes."	<b>Accepted.</b>
89.	Nicholas J. Carino	5.3.8.1	Editorial: The provision can be written more clearly: "Install adhesive anchors in concrete that <del>has a minimum age of</del> <u>is at least 21 days old.</u> "	<b>Accepted.</b>
90.	Nicholas J. Carino	5.3.6.4	New business: The checklist entry and specification need to be consistent with each other. In the specification, there is one referral phrase and, by my interpretation, it relates to the choice of curing methods. So there should be one checklist entry related to the choice of curing method. So I expect the checklist entry to instruct the specifier to specify a particular curing method. However, the checklist deals with specifying the duration the forms are to be kept in place, to specify if forms are to be loosened on one or two sides, and curing materials for architectural concrete. The last entry on architectural concrete belongs in Section 6. If the other checklist entries are to be kept, the specification needs default requirements with the appropriate referral phrases.	<b>New Business.</b>
91.	Nicholas J. Carino	5.3.7.3	New business: This wording in the specification "mortar prepared in accordance with 5.3.7.4" implies that the referenced provision will provide instructions on how to prepare the mortar. The wording in 5.3.7.4 is "For surface repairs in concrete exposed to view, make a trial batch and check color compatibility of repair material with surrounding concrete." Provision 5.2.16 on repair materials states: "For concrete exposed to view, repair mortar shall match adjacent concrete color." In short, "prepared in accordance with 5.3.7.4" is not a helpful instruction on preparing the mortar to repair surface defects.	<b>New Business.</b>
92.	Nicholas J. Carino	5.3.6.5(a)	There is a similar requirement in 5.3.6.2(a) about not fogging in cold weather, but the two provisions are not the same. I suggest that we use the same text as in 5.3.6.2(a): "Do not use fogging if temperature of air in contact with concrete is at or below 32° F."	<b>Accepted.</b>
93.	Nicholas J. Carino	5.3.6.5(b)	Editorial: The wording can be more concise: "Entire surface is to remain covered <u>continuously</u> with water for duration of curing period. <del>Keep concrete surfaces continuously wet.</del> "	<b>Accepted.</b>
94.	Nicholas J. Carino	5.3.6.5(b)	Editorial: The last sentence about mass concrete should be moved to 5.3.6.1 as a general statement, rather than being buried under "ponding".	<b>Accepted.</b>
95.	Nicholas J. Carino	6.2.1.11(c)	Editorial: In 6.2.1.11(a), we are using "for field mockup". So we should be consistent and use "for" rather than "on" where we mention the mockup. Search and replace.	<b>Accepted.</b>
96.	D. Janssen	6.2.2.1(a)	Editorial - remove duplicate period at end of final sentence.	<b>Accepted.</b>
97.	Nicholas J. Carino	5.3.6.6(a)	Editorial: The first entry in the checklist can be written more clearly: Specify alternative minimum curing period or, <del>if no minimum is required, subject to meeting other criteria</del> <u>other criterion for termination of curing.</u> "	<b>Accepted.</b>
98.	Nicholas J. Carino	5.3.6.6(a)	New business. The discussion in the checklist about factors to consider in selecting the curing periods should be deleted and only the last sentence that refers to ACI 308R should be retained. The checklist of ACI 301 is not the place to try to educate the specifier on the complexities of selecting a curing period. The last sentence can be enhanced: "Refer to ACI 308R for additional <u>guidance on factors affecting the required curing period.</u> "	<b>New Business.</b>
99.	Nicholas J. Carino	5.3.6.6(b)	New business: The committee should examine the basis for item (b) in the list, which deals with using the strength of laboratory cured cylinders as a basis for terminating curing. It is not mentioned in ACI 308R, and it is a step backward in concrete technology. As an editorial note, the items probably should be listed (1), (2) etc. to avoid confusing because the provision is 5.3.6.6(b).	<b>New Business.</b>
100.	Nicholas J. Carino	5.3.7.5	New business: This provision is not mentioned in any of the previous provisions on executing the repair. I don't think it's needed and the previous execution sections should include the words "other accepted repair materials" as an alternative to the portland-cement repair mortar.	<b>New Business.</b>
101.	Nicholas J. Carino	6.2.3	I believe the intent is: "Proportion concrete for specified compressive strength of <u>at least 5000 psi</u> if acid..."	<b>Accepted.</b>
102.	Nicholas J. Carino	6.1.4.2	Editorial: I think this is what we mean: "...with Architect/Engineer, <del>Owner, or and Owner</del> or Owner's representative..."	<b>Accepted.</b>
103.	Nicholas J. Carino	6.3.9.3	New business: I don't think the checklist entry belongs here. It should be in the entry for 6.3.9, where it should say that if abrasive blasting is specified also specify the degree of abrasive blasting.	<b>New Business.</b>
104.	Nicholas J. Carino	6.3.9.4	Editorial: Use similar wording as for 6.3.9.3: "If specified, <del>do not use</del> <u>begin</u> mechanical tooling <del>until</del> <u>when</u> concrete has a compressive strength of at least 4500 psi."	<b>Accepted.</b>
105.	Nicholas J. Carino	8.1.3	Editorial: This comment refers to the second sentence in the optional requirements checklist entry. While there are many ways to express the intent, the wording has to be consistent with introducing the listed items. Here is my suggestion: "Refer to ACI 201.2R <del>Guidance on reducing suggests that</del> the potential for DEF in concrete at temperatures between 160°F and 185°F <u>may be reduced by</u> using cementitious materials that consist of at least one of the following:" Change "%" to "percent" in the list to agree with ACI style.	<b>Accepted.</b>
106.	Nicholas J. Carino	8.1.4	Editorial: For clarity, insert "dosage" before "ranges": "...and chemical admixture <u>dosage</u> ranges."	<b>Accepted.</b>
107.	Nicholas J. Carino	8.1.4(j)	Editorial: I think "reporting" is more suitable than "providing." It agrees better with "format".	<b>Accepted.</b>

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108.	D. Janssen	4.2.1.1(b) and Table 4.2.1.1(b)	Where is Exposure Class F3 defined?	<b>Not Accepted.</b> The definitions for exposure class are in ACI 318. The A/E is directed to ACI 318 in mandatory checklist of 4.2.2.6(c).
109.	Nicholas J. Carino	9.2.1.2	Editorial: I think we can improve the grammar of the last sentence: "If specified, nonencapsulated tendons are allowed in slabs-on-ground <del>that</del> : (a) <del>that</del> are not exposed to external sources of chlorides from deicing chemicals, salt, brackish water, seawater, or spray from these sources; or (b) <del>that</del> do not have stressing pockets subject to wetting or direct contact with soils during service.	<b>Accepted.</b>
110.	Kevin Vaughan – Vulcan Materials	4.1.2.3 (b) and 4.2.2.6 (a)	The requirement for the sole use of ASTM C1293 to evaluate ASR is not consistent with current industry practice or desirable for the aggregate industry. The extended test time requirement for ASTM C1293 makes it ineffective for timely response to concrete projects and ineffective for management of potential reactivity in aggregate sources. Inherent variability in the C1293 test procedure, combined with the time delay in obtaining results could also result in significant liability for concrete producers supplying to projects if test results change from innocuous to potential reactive from test to test. Suggest referencing ASTM C1778 in lieu of simply requiring C1293. This would allow the use of C1260 and other, timelier, measures.	<b>Partially Accepted.</b> C1293 has been part of ACI 301 for four years and should, in this time, be a part of industry practice. Aggregate suppliers have had time in these four years to develop C1293 data that would be available for submittals. C1293 is not a quick test and this is a concern for management of changes in reactivity within a quarry, but according to C1778, C1293 is the most accurate test method. C 1260, the alternative, is a much quicker test but is not always accurate (can give false negatives and false positives). There are variabilities in many (all) ASTM tests. This should not result in an increased liability to producers.  Change as follows: <b>4.1.2.3(b)</b> For aggregates: types, sizes, pit or quarry locations, producers' names, aggregate supplier statement of compliance with ASTM C33/C33M, <u>and unless otherwise specified</u> , ASTM C1293 expansion data not more than 24 months old.  <b>OPTIONAL</b> <u>Specify alternative requirements for evaluating potential alkali-silica reactivity of aggregates. Refer to ASTM C1778.</u>  4.2.2.5(a) <b>OPTIONAL</b> Specify alternative requirements for <u>evaluating the potential reactivity of aggregates or for</u> mitigating alkali-silica reaction (ASR).
111.	Jay Gabrielson – Vulcan Materials Company	4.1.2.3(b) and 4.2.2.6(a)	The proposed ASTM C1293 requirement is very difficult for an aggregate producer to timely, realistically, and adequately reflect material characterizations. Mother nature gave us deposits that vary within and between mining formations, and it is unrealistic to think that a test that takes a year will adequately reflect the properties of the current mining face for many sedimentary aggregate formations. Requiring C1293 as the only ASR characterization test increases the chances of misrepresenting the aggregate that is likely being produced at the time of production for a project. Another option is to allow C1260 and C1567 as outlined in the established AAR protocol in ASTM CC1178. To better characterize project materials and minimize the risk of ASR, recommend that ASTM C1778 protocol be required instead of only C1293.	<b>Partially Accepted.</b> C1293 has been part of ACI 301 for four years and should, in this time, be a part of industry practice. Aggregate suppliers have had time in these four years to develop C1293 data that would be available for submittals. C1293 is not a quick test and this is a concern for management of changes in reactivity within a quarry, but according to C1778, C1293 is the most accurate test method. C 1260, the alternative, is a much quicker test but is not always accurate (can give false negatives and

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				<p>false positives). There are variabilities in many (all) ASTM tests. This should not result in an increased liability to producers.</p> <p>Change as follows:  <b>4.1.2.3(b)</b> For aggregates: types, sizes, pit or quarry locations, producers' names, aggregate supplier statement of compliance with ASTM C33/C33M, <u>and unless otherwise specified</u>, ASTM C1293 expansion data not more than 24 months old.</p> <p><b>OPTIONAL</b>  <u>Specify alternative requirements for evaluating potential alkali-silica reactivity of aggregates. Refer to ASTM C1778.</u></p> <p>4.2.2.5(a)  <b>OPTIONAL</b>  Specify alternative requirements for <u>evaluating the potential reactivity of aggregates or for</u> mitigating alkali-silica reaction (ASR).</p>
112.	Nicholas J. Carino	9.2.2.2(b)	Editorial: In the checklist, the word "grout" should be "grouting" because the field mockup is to assess the grouting process: "Specify if field mockup tests of <u>grouting</u> are required."	<b>Accepted.</b>
113.	D. Janssen	9.1.4.2(b)	Editorial - remove first "At least"	<b>Accepted.</b>
114.	Carnell	9.3.3.5(d)	<p><b>Comment:</b>  This section should be revised to require that unbonded post-tensioning tendon stressing pockets have a keyway or other means to mechanically retain the cementitious grout.</p> <p><b>Rationale:</b>  Grout used to fill stressing pockets can shrink, particularly if not mixed properly or if non-shrink material is not used. In addition, it is common in construction for the surface of the stressing pocket to become contaminated with dust, grease from the tendon tail and/or residue from torch cutting. These factors combined with the conical shape and smooth face left by the pocket former can result in a very weak adhesive bond between the grout and the surrounding concrete. With vibration and thermal movements of the structure, the grout plug filling the pocket can become loose and dislodged.</p> <p>When the adhesive bond is lost, water has direct access to the post-tensioning anchorage. This reduces the corrosion protection and overall durability of the structure. The addition of a keyway or other means of establishing a mechanical connection will keep the grout plug in place and watertight should adhesion be impacted.</p>	<b>New Business.</b>
115.	Carnell	9.3.8.2(a) Trimming tendons	<p><b>Comment:</b>  Oxyacetylene flame cutting of tendon tails should not be permitted; removal of excess lengths of tendons shall only be done by plasma cutting, abrasive wheel or shears.</p> <p><b>Rationale:</b>  Oxyacetylene flame cutting is a common means of trimming tendon tails on unbonded post-tensioning tendons. Properly done, it can give satisfactory results; however, it is frequently done improperly and can lead to several problems, including:</p> <ul style="list-style-type: none"> <li>• Cutting the tendon tails too long or too short. When tendon tails are too long, encapsulation caps cannot be attached to the anchorage, and concrete cover may not be achieved as specified.</li> <li>• Causing damage to the encapsulation of the anchorage. Keeping the flame too long in the pocket can melt the plastic encapsulation, damage seals and warp metal rings.</li> <li>• Leaving residue on the stressing pocket surface, and thus interfering with the bond between the pocket grout and the concrete.</li> </ul> <p>All of these problems make it difficult, if not impossible, to install the encapsulated tendon to provide a watertight system as specified. Further, repair of these deficiencies is not simple and straight forward. The problems of long tendon tails and residue</p>	<p><b>Accepted.</b>  9.3.8.2(a) <i>Trimming tendons</i>—After acceptance of stressing records described in 9.1.3.3(c), cut excess tendon tails. Strand tails shall be at least 1/2 in. from face of anchor casting after cutting. For encapsulated tendons, strand length protruding from face of anchor casting after cutting shall not be more than maximum specified by encapsulation system manufacturer and shall not interfere with proper sealing of end cap. Concrete cover for the tendon shall comply with 9.3.3.5(f).  Cut tendon tails within one working day after acceptance of stressing records by Architect/Engineer. For encapsulated tendons,</p>

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			<p>on the pocket faces can be corrected with effort. However when the encapsulation is damaged from the heat, it is more problematic, particularly if the encapsulation cap cannot be properly installed on the anchor.</p> <p>In addition if not closely inspected, these problems can be covered up by the grouting of the stressing pockets and may not be discovered, leaving a compromised protection system in place.</p> <p>The alternatives of plasma, abrasive wheel and shear cutting provide more consistent cutting and are not prone to these problems.</p>	<p>install encapsulation caps within 8 hours after cutting off tendon tails.</p> <p><del>Unless otherwise specified</del> For tendons with encapsulated anchorages, remove excess lengths of tendons beyond anchorages <u>so as to ensure proper fit of encapsulation cap.</u> <del>by plasma cutting, rapid oxyacetylene burning, abrasive wheel, or shears.</del> Cutting of tendons shall not damage wedges or compromise encapsulation system.</p>
116.	Nicholas J. Carino	11.3.3.3	<p>Editorial: The wording in 11.3.2 was changed from "comply with" to "conform to" but in 11.3.3 and 11.3.4 , the change has not been made. Let's make them read "conform to" for consistency because they are next to each other.</p> <p>General new business: In the specification we use "comply with" and "conform to", and we should decide which one to use. The words are similar in meaning, but when referring to following a voluntary standard, I believe "conform to" is the right wording.</p>	<b>Accepted.</b>
117.	D. Janssen	13.2.11.10(e)	Where are Exposure Classes C1 and C2 defined?	<p><b>Not Accepted.</b></p> <p>The definitions for exposure class are in ACI 318. The A/E is directed to ACI 318 in mandatory checklist of 4.2.2.6(e).</p>
118.	Eric A. Carleton	13.1.3.1(f)	<p><b>13.1.3.1(f) Plant certification</b>—Unless otherwise specified, submit current certificates furnished by Precast/Prestressed Concrete Institute (PCI) for all prestressed reinforcement products, <u>as well as certificates furnished by the Precast/Prestressed Concrete Institute (PCI) or National Precast Concrete Association (NPCA) for conventionally reinforced products, designating plant and personnel certification.</u></p>	<p><b>Partially Accepted. Add in 13.1.4.2</b></p> <p><b>OPTIONAL</b></p> <p>Specify if different fabricator qualifications are allowed. <u>The National Precast Concrete Association (NPCA) may provide an alternative certification program applicable to some structural precast concrete products, except those which are prestressed.</u></p> <p>Add in 14.1.3.7</p> <p>Specify alternative acceptable fabricator qualifications. <u>The National Precast Concrete Association (NPCA) may provide an alternative certification program applicable to some structural precast concrete products, except those which are prestressed.</u></p> <p>The rest will be taken as new business.</p>
119.	Eric A. Carleton	13.1.4.2	<p><b>13.1.4.2 Fabricator qualifications</b>—Unless otherwise specified, a fabricator shall be certified in accordance with <u>the PCI or NPCA Plant Certification programs for the specified group and the category specified in Contract Documents.</u> Unless otherwise specified, testing and inspection shall be performed by <u>PCI or NPCA-certified personnel.</u> Unless otherwise specified, fabricator shall have at least 5 years of experience in producing precast concrete members similar to those required in Work</p>	<p><b>Partially Accepted. Add in 13.1.4.2</b></p> <p><b>OPTIONAL</b></p> <p>Specify if different fabricator qualifications are allowed. <u>The National Precast Concrete Association (NPCA) may provide an alternative certification program applicable to some structural precast concrete products, except those which are prestressed.</u></p> <p>Add in 14.1.3.7</p>



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				<p>Specify alternative acceptable fabricator qualifications. <a href="#">The National Precast Concrete Association (NPCA) may provide an alternative certification program applicable to some structural precast concrete products, except those which are prestressed.</a></p> <p>The rest will be taken as new business.</p>
120.	Eric A. Carleton	13.1.4.2 Mandatory/Optional	<p>MANDATORY</p> <p>Specify Group and Category for the fabricator:</p> <p>(a) Group A</p> <p>i. Category A1—Architectural Precast Products; <u>Prestressed, PCI; no prestress reinforcement, PCI or NPCA; Architectural Cladding &amp; Veneer Products, PCI</u></p> <p>(b) Group C or CA</p> <p>i. Category C1—Precast Concrete Products (no prestressed reinforcement); <u>PCI or NPCA</u></p> <p>ii. Category C2—Prestressed Hollow-Core and Repetitive Products; <u>PCI</u></p> <p>iii. Category C3—Prestressed Straight-Strand Structural Members; <u>PCI</u></p> <p>iv. Category C4—Prestressed Deflected-Strand Structural Members; <u>PCI</u></p> <p>OPTIONAL</p> <p>Specify if different fabricator qualifications are allowed. PCI MNL 116, <del>and</del> MNL 117 and NPCA Quality Control Manual for Precast Concrete Plants mandate source testing requirements and a plant Quality Systems Manual. PCI and NPCA certification also ensures periodic auditing of plants for compliance with requirements in their respective programs. <del>PCI MNL 116 and MNL 117.</del></p> <p>Specify alternative personnel certification requirements for testing and inspection.</p> <p>Specify if 5 years of work experience is not required.</p>	<p><b>Partially Accepted.</b></p> <p><b>Add in 13.1.4.2</b></p> <p><b>OPTIONAL</b></p> <p>Specify if different fabricator qualifications are allowed. <a href="#">The National Precast Concrete Association (NPCA) may provide an alternative certification program applicable to some structural precast concrete products, except those which are prestressed.</a></p> <p>Add in 14.1.3.7</p> <p>Specify alternative acceptable fabricator qualifications. <a href="#">The National Precast Concrete Association (NPCA) may provide an alternative certification program applicable to some structural precast concrete products, except those which are prestressed.</a></p> <p>The rest will be taken as new business.</p>
121.	Nicholas J. Carino	14.2.14	<p>Editorial: The checklist entry has a long sentence with an assortment of items. Clarity can be improved by using several short sentences:</p> <p>"Specify if stone facing is required.</p> <p><u>Specify alternative anchorage requirements.</u></p> <p><u>Specify joint pattern and joint widths.</u></p> <p><u>Specify veining direction.</u></p> <p><del>Specify location of stone facings and anchorage requirements if different from minimum specified, embedment depth of anchors into concrete, supports, and attachments, joint widths and pattern. Indicate stone veining direction in Contract Documents."</del></p>	<p><b>Accepted.</b></p>
122.	Nicholas J. Carino	14.2.15.3	<p>I think a checklist entry is needed along with a change to the specification for item (c):</p> <p>"(c) Specified concrete cover <del>indicated in Contract Documents"</del></p> <p>Checklist: "<u>Specify concrete cover requirements if different from 3.3.2.3(c).</u>"</p>	<p><b>Partially Accepted.</b> Reworded the main specification requirement so that an optional item was not necessary as the option to change cover was given earlier in the specification.</p>
123.	Nicholas J. Carino	14.1.4.2(d)	<p>Insert the period in the article number. Should we indicate who provides the directive? "14.1.4.2(d) Demolish and remove sample panels if directed <u>by Architect/Engineer.</u></p>	<p><b>Partially Accepted.</b> The period is accepted. The rest will be new business.</p>
124.	D. Janssen	14.2.6.2(g)	<p>What is "detectable deterioration"? (end of first paragraph). This needs to be more specific. For example, is minor surface scaling permitted? Or does "detectable deterioration" refer specifically to tensile bond strength? If so, this needs to be reworded to make that clear.</p>	<p><b>Not Accepted.</b></p> <p>Not sure how "no detectable deterioration" could be interpreted as allowing minor surface scaling.</p>

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				<p>Defining “no”, “detectable” and “deterioration” adds a lot of unnecessary text including phrases like “including, but not limited to....”</p>
125.	Eric A. Carleton	14.1.3.7	<p><b>14.1.3.7 Fabricator qualifications</b>—Unless otherwise specified, fabricator shall be certified in accordance with PCI or NPCA Plant Certification program. Unless otherwise specified, fabricator shall be designated a PCI or NPCA Certified plant for specified group and category specified in <u>Contract Documents</u>.</p>	<p><b>Partially Accepted.</b> <b>Add in 13.1.4.2</b> <b>OPTIONAL</b> Specify if different fabricator qualifications are allowed. <u>The National Precast Concrete Association (NPCA) may provide an alternative certification program applicable to some structural precast concrete products, except those which are prestressed.</u></p> <p>Add in 14.1.3.7 Specify alternative acceptable fabricator qualifications. <u>The National Precast Concrete Association (NPCA) may provide an alternative certification program applicable to some structural precast concrete products, except those which are prestressed.</u></p> <p>The rest will be taken as new business.</p>
126.	Eric A. Carleton	14.1.3.7	<p>MANDATORY</p> <p><u>Specify Group and Category for the fabricator:</u> a) <u>Group A</u> i. <u>Category A1—Architectural Precast Products; (Prestressed, PCI; no prestress reinforcement, PCI or NPCA); Architectural Cladding &amp; Veneer Products, PCI;</u> ii. <u>Category AT- Miscellaneous Architectural Trim Units; PCI or NPCA</u></p> <p>OPTIONAL</p> <p>Specify alternative acceptable fabricator qualifications. Specify if alternative PCI category and group is required.</p>	<p><b>Partially Accepted.</b> <b>Add in 13.1.4.2</b> <b>OPTIONAL</b> Specify if different fabricator qualifications are allowed. <u>The National Precast Concrete Association (NPCA) may provide an alternative certification program applicable to some structural precast concrete products, except those which are prestressed.</u></p> <p>Add in 14.1.3.7 Specify alternative acceptable fabricator qualifications. <u>The National Precast Concrete Association (NPCA) may provide an alternative certification program applicable to some structural precast concrete products, except those which are prestressed.</u></p> <p>The rest will be taken as new business.</p>

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127.	Jon Ohmes	Section 13 and Section 14	Please add NPCA Plant Certification to ACI 301's accepted certification programs for products covered in Section 13, Precast Structural Concrete, and Section 14, Precast Architectural Concrete.	<p><b>Partially Accepted.</b>  <b>Add in 13.1.4.2</b>  <b>OPTIONAL</b>                      Specify if different fabricator qualifications are allowed. <a href="#">The National Precast Concrete Association (NPCA) may provide an alternative certification program applicable to some structural precast concrete products, except those which are prestressed.</a></p> <p>Add in 14.1.3.7                      Specify alternative acceptable fabricator qualifications. <a href="#">The National Precast Concrete Association (NPCA) may provide an alternative certification program applicable to some structural precast concrete products, except those which are prestressed.</a></p> <p>The rest will be taken as new business.</p>
128.	Greg Wong, PE Knife River NW greg.wong@kniferiver.com; 503.880.7504	<b>4.2.3.4(b)</b> Field strength test data for two groups of strength tests	<p><b>Current Statement:</b> "Field strength test data for two groups of strength tests - If the field strength test data represent two groups of strength tests for two mixtures with average strengths that encompass <math>f_{cr}'</math>, plot the average strength <math>X_1</math> and <math>X_2</math> of each group versus the <math>w/cm</math> of the corresponding mixture proportions and interpolate between them to establish the required <math>w/cm</math>."</p> <p><b>Issue/Concern:</b> Current wording limits to only using two groups of strength tests and no more. Need to allow using two or more groups of strength tests.</p> <p><b>Justification:</b></p> <ol style="list-style-type: none"> <li>The old ACI 318, ACI 318-11, Section 5.3.3.1 stated "Required proportions shall be permitted to be established by interpolation between the strengths and proportions of <b>two or more</b> test records..." This was lost when ACI 318 removed most of the proportioning criteria.</li> <li>Statistically it is better to use more data than limited data.</li> <li>A two-point curve has an <math>R^2</math> of 1.00, the reviewer has no way of knowing if the data could be possibly misleading. Having three or more points on a curve is much better as it will allow the reviewer to determine if the data used is a good fit or not. It is way better to use more data than not enough data and ACI 318-11 did allow more than two test records.</li> </ol> <p><b>Proposed Change:</b> "4.2.3.4(b) Field strength test data for two <b>or more</b> groups of strength tests – If the field test data represent two <b>or more</b> groups of strength tests for two <b>or more</b> mixtures...plot the average strengths <del><math>X_1</math> and <math>X_2</math></del> of each group..."</p>	<p><b>Accepted.</b></p>
129.	Greg Wong, PE Knife River NW greg.wong@kniferiver.com; 503.880.7504	<b>4.2.3.4(b)</b> Field strength test data for two groups of strength tests	<p><b>Current Statement:</b> "Field strength test data for two groups of strength tests-If the field strength test data represent two groups of strength tests for two mixtures with average strengths that encompass <math>f_{cr}'</math>, plot the average..."</p> <p><b>Issue/Concern:</b> There are times when the two mixes exceed <math>f_{cr}'</math> and this should not be a problem but it is with current verbiage. e.g. <math>f_{cr}'</math> calcs to 3,700 psi and two strengths are 3,900 psi and 4,500 psi and want to use the 3,900 psi but technically it does not encompass <math>f_{cr}'</math>.</p> <p><b>Justification:</b></p> <ol style="list-style-type: none"> <li>It is not always feasible to have two strengths encompass or bracket <math>f_{cr}'</math>, especially for a 3,000 psi mix, most RM suppliers do not have strength summaries below a design strength of 3,000 psi.</li> </ol>	<p><b>New Business.</b></p>

No.	Public Commenter Name	Provision No.	Public Comment	Response
			<p>b. ACI 318-11 did not require data to encompass, it only stated "Required proportions shall be permitted to be established by interpolation between the strengths and proportions of two or more test records, each of which meets other requirements of this section."</p> <p>c. Per Section ACI 301 4.2.3.4 Documentation of average compressive strength: "Provide documentation indicating the proposed concrete proportions will produce an average compressive strength equal to or greater than the required average compressive strength." To be greater than does not require encompassing <math>f_{cr}'</math>.</p> <p><b>Proposed Change:</b> "If the field test data represent two groups of strength tests for two mixtures with average strengths that encompass <u>or exceed</u> <math>f_{cr}'</math>..."</p>	
130.	Greg Wong, PE Knife River NW greg.wong@kniferiver.com; 503.880.7504	<b>4.2.3.4(b)</b> Field strength test data for two groups of strength tests	<p><b>Current Statement:</b> "...plot the average strength <math>X_1</math> and <math>X_2</math> of each group versus the <math>w/cm</math> of the corresponding mixture proportions and interpolate between them to establish the required <math>w/cm</math>. Establish mixture proportions for <math>f_{cr}'</math> based on the required <math>w/cm</math>."</p> <p><b>Issue/Concern:</b> I am not a big fan of <math>w/cm</math> as it is so difficult to really know what the real <math>w/cm</math> is. I prefer to plot the graph as strength versus <math>cm</math> content, this assures the mix is properly proportioned.</p> <p><b>Justification:</b></p> <p>a. Field <math>w/cm</math> is only as accurate as any water addition documented and if the RM plant aggregate moistures are close to actual moistures. These <math>w/cm</math>'s can be misleading at times so why force the RM producer doing the submittal to use numbers that are possibly misleading?</p> <p>b. Graphs using <math>cm</math> content will assure proper strengths better than <math>w/cm</math> graphs. Mix designer could have the water wrong on the design and think the <math>w/cm</math> is much lower than what it will actually be during production. This can lead to strength issues on the job.</p> <p><b>Proposed Change:</b> "...plot the average strength <math>X_1</math> and <math>X_2</math> of each group versus <math>w/cm</math> <u>or cementitious content</u> of the corresponding mixture proportions and interpolate between them to establish the required <math>w/cm</math> <u>or cementitious content</u>. Establish mixture proportions for <math>f_{cr}'</math> based on the required <math>w/cm</math> <u>or cementitious content</u>."</p>	Accepted.
131.	Greg Wong, PE Knife River NW greg.wong@kniferiver.com; 503.880.7504	<b>4.2.3.4(c)(a)</b> Trial Mixtures	<p><b>Current Statement:</b> "(a) Use materials and material combinations listed in 4.2.1.1 through 4.2.1.4 proposed for the Work."</p> <p><b>Issue/Concern:</b> Trial batch section has no terminology stating truck trial batches are acceptable. It also does not state trial batches are laboratory but implied as Section 4.2.3.5, field verification of selected mixture proportions, states conducting field verification.</p> <p><b>Justification:</b></p> <p>a. Truck trial batches can better simulate actual haul times meaning water demand can be better defined.</p> <p>b. Typically truck trial batch strengths better replicate actual production strengths, laboratory can be much higher.</p> <p>c. There have been times when an engineer questioned us on whether or not truck trial batch data was valid.</p> <p><b>Proposed Change:</b> "(a) Use materials and material combinations listed in 4.2.1.1 through 4.2.1.4 proposed for the Work. <b>Trial mixtures are not limited to the laboratory but can be performed using ready-mixed trucks.</b>"</p>	Accepted.
132.	Greg Wong, PE Knife River NW greg.wong@kniferiver.com; 503.880.7504	<b>4.2.3.4(c)(b)</b> Trial mixtures	<p><b>Current Statement:</b> "Determine <math>f_{cr}'</math> in accordance with 4.2.3.3(a) if suitable field strength test data are available, or use Table 4.2.3.1."</p> <p><b>Issue/Concern:</b> Determining <math>f_{cr}'</math> based on historical data should not be used as trial batches do not necessarily match up well with production data. This difference could get a RM supplier in trouble as trial batch data is typically higher which means if they proportion exactly to the required over-design, production strengths will be much lower than the over-design which could make their probability of a low break go above the allowable 9%.</p> <p><b>Justification:</b></p> <p>a. Trial mixtures, especially if performed in the laboratory, tend to be higher strength than actual production strengths. This "labcrete" (laboratory trial batch) difference could result in having low strengths once going under production.</p>	<p><b>Not Accepted.</b></p> <p>Field strength data can be used to establish <math>f_{cr}'</math> and the evaluation and documentation can be based on field or trial (laboratory or production) mixtures. Requiring <math>f_{cr}'</math> based Table 4.2.3.1 is excessive if field data exists to calculate a standard deviation. It is the producer's responsibility to establish an allowance for the difference between labcrete and field production.</p>

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			<p>b. Trial mixtures can be performed without simulating haul time and expected concrete temperatures. Longer haul time and higher concrete temperatures can have a significant impact on strength. Thus the need to have more over-design by using the table.</p> <p><b>Proposed Change:</b> “Determine <math>f_{cr}'</math> in accordance with 4.2.3.3(a) if suitable field strength test data are available, or use Table 4.2.3.1.”</p>	
133.	Greg Wong, PE Knife River NW greg.wong@kniferiver.com; 503.880.7504	<b>4.2.3.4(c)(c)</b> Trial mixtures	<p><b>Current Statement:</b> “Make at least three trial mixtures for each concrete class with a range of proportions that will produce a range of compressive strengths that will encompass <math>f_{cr}'</math>.”</p> <p><b>Issue/Concern:</b> There are times it is not possible to encompass (especially with low strength mixes) or maybe while doing trial batches, the mix designer misjudges the mix proportions and slightly misses the lower end.</p> <p><b>Justification:</b></p> <p>a. It is not always feasible to have two strengths encompass or bracket <math>f_{cr}'</math>, especially for a 3,000 psi mix, most RM suppliers cannot proportion a mix below a strength of 4,200 psi because the mix will not meet the three abilities, Workability, Pumpability, and Finishability.</p> <p>b. For when there is data, ACI 318-11 did not require data to encompass, it only stated “Required proportions shall be permitted to be established by interpolation between the strengths and proportions of two or more test records, each of which meets other requirements of this section.” Same should apply for trial batches.</p> <p>c. Per Section ACI 301 4.2.3.4 Documentation of average compressive strength: “Provide documentation indicating the proposed concrete proportions will produce an average compressive strength equal to or greater than the required average compressive strength.” To be greater than does not require encompassing <math>f_{cr}'</math>.</p> <p><b>Proposed Change:</b> “Make at least three trial mixtures for each concrete class with a range of proportions that will produce a range of compressive strengths that will encompass <u>or exceed</u> <math>f_{cr}'</math>.”</p>	<b>New Business.</b>
134.	Greg Wong, PE Knife River NW greg.wong@kniferiver.com; 503.880.7504	<b>4.2.3.4(c)(f)</b> Trial mixtures	<p><b>Current Statement:</b> “Establish mixture proportions based on the trial batch data to achieve an average compressive strength of at least <math>f_{cr}'</math> as determined in 4.2.3.3 and to not exceed maximum <math>w/cm</math>.”</p> <p><b>Issue/Concern:</b> For existing data ACI 301 spells out graphing the data, yet it does not say this for the trial batch process.</p> <p><b>Justification:</b></p> <p>a. Determining the trial batch mixture proportions should be the same as the process for using existing data, graph it.</p> <p>b. The trial batch process is typically less accurate than using existing production data, so the mix designer should not be allowed to use any method they choose to determine the mixture proportions.</p> <p><b>Proposed Change:</b> “(f) <u>Plot the strength of each trial mixture versus the corresponding <math>w/cm</math> or cementitious content to</u> establish mixture proportions based on the trial batch data to achieve an average compressive strength of at least <math>f_{cr}'</math> as determined in 4.2.3.3 and to not exceed maximum <math>w/cm</math>.”</p>	<b>Not Accepted.</b> This detail of the process is not necessary. One may choose methods other than graphing.
135.	Greg Wong, PE Knife River NW greg.wong@kniferiver.com; 503.880.7504	Propose a new section for alternate mix design method	<p><b>Current Statement:</b> No verbiage.</p> <p><b>Issue/Concern:</b> ACI 318-11 had an alternate method of proportioning in Section 5.4 – Proportioning without field experience or trial mixtures. This needs to be added to ACI 301 even though it is in ACI 318 (Section 26.4.4.1(b)) as some specifications may not specify ACI 318 and only refer to ACI 301.</p> <p><b>Justification:</b></p> <p>a. There are times when a mix cannot be justified with data per ACI 301 and there is not enough time to run trial mixtures. The RM supplier needs to have a way to get a mix approved through an alternative way. Just remember, ultimately any low</p>	<b>New Business.</b>

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			<p>breaks associated to a poorly proportioned mix will come back to the RM producer so they are not going to do anything stupid (if they do, they shouldn't be in business!).</p> <p>b. As stated above, ACI 318-11 had an alternate method of proportioning in Section 5.4 – Proportioning without field experience or trial mixtures.</p> <p>c. The current ACI 318 Section 26.4.3.1(b) allows an alternative method: “Concrete mixture proportions shall be established in accordance with Article 4.2.3 of ACI 301 or by an alternative method acceptable to the licensed design professional.” So ACI 301 should also allow for an alternative method.</p> <p><b>Proposed Change: “4.2.3.4(d) Proportion without field experience or trial mixtures – If data required are not available, concrete proportions shall be based upon other experience or information, if approved by the licensed design professional. The <math>f_{cr}'</math> of concrete produced with materials similar to those proposed for use shall be at least 1200 psi greater than <math>f_c'</math>. This alternative shall not be used if <math>f_c'</math> is greater than 5000 psi.”</b></p>	
136.	<p>Greg Wong, PE Knife River NW greg.wong@kniferiver.com; 503.880.7504</p>	<p>Propose adding back in the ACI 318 flow chart</p>	<p><b>Current Statement:</b> No “Selection and Documentation of Concrete Proportions” flow chart.</p> <p><b>Issue/Concern:</b> This flow chart was a great visual tool of the mix proportioning process, Section 4.2.3. Some people get confused between the two criteria, establishing the required average compressive strength and then documentation of average compressive strength.</p> <p><b>Justification:</b></p> <p>a. Engineers and mix designers get lost in the verbiage of the process and the flow chart has been a very helpful tool to get them back on track of what the actual requirements are.</p> <p>b. A fair percentage of people learn better by visual tools, the flow chart has been a great visual tool of the proportioning process and how it is divided into two steps.</p> <p><b>Proposed Change:</b> Insert the old ACI 318-11 “Selection and Documentation of Concrete Proportions” Flow Chart. I have modified it by adding the dashed line to separate “Establishing Required Average Compressive Strength, <math>f_{cr}'</math>” criteria from the “Documentation of Average Compressive Strength” criteria:</p>	<p><b>Not Accepted.</b></p> <p>The flow chart was advisory in the commentary of ACI 318-11. It is not appropriate to incorporate this flow chart in a specification as a means to educate the engineers and mix designers. Possibly ACI Committee 211 can consider using this guidance.</p>

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			<p>STRUCTURAL CONCRETE BUILDING CODE (ACI 318-11) AND COMMENTARY</p> <p>COMMENTARY</p> <p>Concrete production facility has field strength test records for the specified class or within 1000 psi of the specified class of concrete</p> <p>Yes No</p> <p>≥ 30 consecutive tests</p> <p>No</p> <p>Yes</p> <p>Calculate <math>s_e</math></p> <p>Required average strength using Table 5.3.2.1</p> <p>Two groups of consecutive tests (total ≥ 30)</p> <p>No</p> <p>Yes</p> <p>Calculate average <math>s_e</math></p> <p>15 to 29 consecutive tests</p> <p>No (No data for <math>s_e</math>)</p> <p>Yes</p> <p>Calculate <math>s_e</math> and increase using Table 5.3.1.2</p> <p>Required average strength from Table 5.3.2.2</p> <p>Establish Required Average Compressive Strength, <math>f'_{cr}</math> (Determine Over-Design)</p> <p>Field record of at least ten consecutive test results using similar materials and under similar conditions is available</p> <p>No</p> <p>Yes</p> <p>Results represent one mixture</p> <p>No</p> <p>Yes</p> <p>Results represent two or more mixtures</p> <p>Average ≥ required average</p> <p>No</p> <p>Yes</p> <p>Plot average strength versus proportions and interpolate for required average strength</p> <p>Plot average strength versus proportions and interpolate for required average strength</p> <p>Determine mixture proportions according to 5.4 (requires special permission)</p> <p>Documentation of Average Compressive Strength (Validate Mix Proportions)</p> <p>Submit for approval</p> <p>Fig. R5.3—Flow chart for selection and documentation of concrete proportions.</p> <p>American Concrete Institute Copyrighted Material—www.concrete.org</p>	
137.	Dale Rinehart	3.3.2.5(a)	<p>Section 3.3.2.5(a) contains prescriptive language on bar support spacing below WWR that needs to be removed. The provision should focus on placement in accordance with concrete cover requirements defined in ACI 318 and within the allowable placement tolerances permitted by ACI 117. Suggested wording is:</p> <p><i>Welded wire reinforcement in slabs on composite steel deck and slabs on ground-</i> Reinforcement shall be placed into position prior to concrete placement. Unless otherwise specified, do not extend welded wire reinforcement through movement joints. Place reinforcement as indicated in Contract Documents. <del>If reinforcement less than W4.0 or D4.0 is</del></p>	New Business.

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			<p><del>specified, the continuous support spacing shall not exceed 12in.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318 shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Slab designs for which ACI 318 methods are not applicable shall be accompanied by project-specific placement requirements and permissible placement tolerances defined on the Contract Documents. Reinforcement nearest edge of slab shall be no farther from edge of slab than greater of specified cover or 2 in. Unless otherwise specified, overlap parallel wires at edges of reinforcement not less than 2 in.</p>	
138.	Dale Rinehart	3.3.2.5(b)	<p>Section 3.3.2.5(b) contains prescriptive language on bar support spacing below WWR that needs to be removed. The provision should focus on placement in accordance with concrete cover requirements defined in ACI 318 and within the allowable placement tolerances permitted by ACI 117. Suggested wording is:</p> <p><i>Welded wire reinforcement in elevated formed slabs, slabs on noncomposite steel deck, and members not covered in 3.3.2.5.a - Use sheets of welded wire reinforcement. Place and support reinforcement before concrete placement to maintain location within tolerances indicated for nonprestressed reinforcement in ACI 117. <del>If reinforcement less than W4.0 or D4.0 is specified, the continuous support spacing shall not exceed 12" perpendicular to the direction of span.</del> Reinforcement specified to satisfy sectional strength, shrinkage &amp; temperature, and/or prescriptive minimum reinforcing requirements of ACI 318, unless otherwise explicitly defined on the Contract Documents, shall be placed within the specified concrete cover requirements of ACI 318 for the concrete slab, subject to the concrete cover tolerances in ACI 117. Lap splice edges and ends of welded wire reinforcement sheets as indicated in Contract Documents.</i></p>	<b>New Business.</b>
139.	Brian Rice – Lehigh Hanson	4.1.2.3 (a) and 4.2.2.6 (b)	<p>Currently the requirement for evaluation of Aggregate Silica Reactivity (ASR) is limited to ASTM C1293 which is a year-long test. The requirement also states that this test data be no more than 18 months old. While C1293 is currently considered the most reliable test, the length of time it takes to complete the test between actual sampling at the source and receipt of the final report is more likely 13-14 months. Therefore the current time requirement for data to be no more than 18 months old should be revised or eliminated.</p> <p>It should be considered that in place of the current requirement, ASTM C1778 which is the “Standard Guide for Reducing the Risk of Deleterious Alkali Aggregate Reaction in Concrete” should be inserted in its place. Several members of ACI 301 were actively involved in the development of C1778.</p> <p>In the current draft of 301 out for public comment, section 4.2.2.6(b) is directing the concrete producer to use C1567 to evaluate the concrete mix combination along with requiring the concrete producer or supplier to provide supporting data showing C1260 data. This is in contradiction to 4.1.2.3 which only allows C1293. This could be resolved by simply following the guidance of C1778 in lieu of the current and proposed requirements.</p>	<b>Not Accepted.</b> Option (b) requires testing by C1567. This is a test to show the constituents in the concrete mixture will mitigate ASR. This is not an aggregate test. C1260 is just a validation that this test method is reliable. C1778 is not written in mandatory language and cannot be referenced in the specification.
140.	Kevin Vaughan – Vulcan Materials	4.1.2.3 (a) and 4.2.2.6 (a)	<p>The requirement for the sole use of ASTM C1293 to evaluate ASR is not consistent with current industry practice or desirable for the aggregate industry. The extended test time requirement for ASTM C1293 makes it ineffective for timely response to concrete projects and ineffective for management of potential reactivity in aggregate sources. Inherent variability in the C1293 test procedure, combined with the time delay in obtaining results could also result in significant liability for concrete producers supplying to projects if test results change from innocuous to potential reactive from test to test. Suggest referencing ASTM C1778 in lieu of simply requiring C1293. This would allow the use of C1260 and other, timelier, measures.</p>	<p><b>Partially Accepted.</b> C1293 has been part of ACI 301 for four years and should, in this time, be a part of industry practice. Aggregate suppliers have had time in these four years to develop C1293 data that would be available for submittals. C1293 is not a quick test and this is a concern for management of changes in reactivity within a quarry, but according to C1778, C1293 is the most accurate test method. C 1260, the alternative, is a much quicker test but is not always accurate (can give false negatives and false positives). There are variabilities in many (all) ASTM tests. This should not result in an increased liability to producers.</p> <p>Change as follows:</p>



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				<p><b>4.1.2.3(b)</b> For aggregates: types, sizes, pit or quarry locations, producers' names, aggregate supplier statement of compliance with ASTM C33/C33M, <u>and unless otherwise specified</u>, ASTM C1293 expansion data not more than 24 months old.</p> <p><b>OPTIONAL</b>  <u>Specify alternative requirements for evaluating potential alkali- silica reactivity of aggregates. Refer to ASTM C1778.</u></p> <p>4.2.2.5(a)  <b>OPTIONAL</b>  Specify alternative requirements for <u>evaluating the potential reactivity of aggregates or for</u> mitigating alkali-silica reaction (ASR).</p>
141.	Clayton Reichle – Lehigh Hanson		<p>In Section 4.1.2.3(b), it is currently stated that “For aggregates: types, pit or quarry locations, producers’ names, aggregate supplier statement of compliance with ASTM C33/C33M, and ASTM C 1293 expansion data not more than 18 months old.”. There are several concerns with the as written requirements:</p> <ol style="list-style-type: none"> <li>1. Section 4.1.2.3(b) lists ASTM C1293 as the only option available for the aggregate producer to determine potential alkali- aggregate reactivity of any material to be used in concrete per ACI 301. Being a 12 month test, if there is any issue with the sample being tested in the lab (i.e. delayed start of test, broken bar(s) during readings, etc) this will ultimately delay the final result of that sample. If this test result delay occurs late in the 12 month test period, this could cause significant project delays, and/or loss of the job if the owner/contractor decides to switch aggregate source to keep the project timeline in place.</li> <li>2. ASTM C1260 is commonly used to determine potential alkali-aggregate reactivity. This test method is also better suited for monitoring aggregate sources that may have geological changes that require timely results to actively monitor those geological changes.</li> <li>3. ASTM C1778 has been actively adopted throughout industry specifications (both ASTM &amp; ACI) as the recommended document to provide guidance on alkali-aggregate reactivity. This document provides clear guidance to the user (owner, contractor) on what risks are associated with the various industry accepted test methods and how to minimize that risk for their project and the materials they are selecting.</li> <li>4. From the 301 draft out for public comment: Section 4.2.2.6(b) directs the concrete producer to evaluate the aggregate and cementitious combination using ASTM C1567, as well as requiring the user to submit supporting data for each aggregate showing expansion in excess of 0.10 percent at 16 days according to ASTM C1260. If the aggregate source is historically above 0.10 percent at 16 days, why does the aggregate produce also have to perform ASTM C1293 to confirm the result of the short term test method? The additional long term testing appears to be excessive.</li> </ol> <p>Based on the concerns and limitations of ASTM C1293 noted above, it would be recommended that the user of the ACI 301 document be able to utilize the ASTM C1778 guide in determining the appropriate alkali-aggregate reactivity test method for their project.</p>	<p><b>Not Accepted.</b>  Aggregate suppliers should schedule testing to ensure backup data is always readily available. ASTM C1260 is quicker but less accurate – it has been shown to give false positives and false negatives. ASTM C1778 is not in mandatory language and cannot be referenced in the specification. ASTM C1293 data provides the contractor with information to make a decision on what option to use in 4.2.2.6.</p>
142.	Richard S. Phillips, Vulcan Materials	1.4.1.2	ASTM C1260 is not listed with the ASTM standards although that test method is referenced later in 4.2.2.6	<b>Accepted.</b>
143.	Richard S. Phillips, Vulcan Materials	4.1.2.3	Implies that passing ASTM C1293 test results less than 24 months old are the only acceptable results for submittal; this is not in concert with 4.2.2.6 which lists 3 viable options for demonstrating durability. The provision should be revised to require submittals demonstrate compliance using one of the three alternatives listed in 4.2.2.6.	<p><b>Not Accepted.</b>  Option (b) requires testing by C1567. This is a test to show the constituents in the concrete mixture will mitigate ASR. This is not an aggregate test. C1260 is just a validation that this test method is reliable. C1778 is not written in mandatory language and cannot be referenced in the specification.</p>

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144.	Richard S. Phillips, Vulcan Materials	4.2.2.6	If 1293 is the optimal data point desired, but the other options are viable alternatives this section should be revised to reflect that. Suggested language could be something along these lines: "When ASTM 1293 results less than 24 months old are available those results should be used for submittal. In situations when 1293 data are not available it is acceptable that optional data per (b) or (c) be submitted to demonstrate suitable durability."	<b>Not Accepted.</b> Option (b) requires testing by C1567. This is a test to show the constituents in the concrete mixture will mitigate ASR. This is not an aggregate test. C1260 is just a validation that this test method is reliable. C1778 is not written in mandatory language and cannot be referenced in the specification.
145.	David P. Gustafson	1.4.1.2	Consider updating the ASTM "A" standards.	<b>Accepted.</b>
146.	David P. Gustafson	1.4.1.3	One of the American Welding Society codes referenced in 1.4.1.3 is: AWS D1.1/D1.1M:2015—Structural Welding Code—Steel <b>Discussion</b> – Recently AWS published the 2020 edition of the D1.1/D1.1M code.	<b>Not Accepted.</b> ACI 318-19 references the 2015 version.
147.	David P. Gustafson	1.4.1.3	Correct the title of the D1.4/D1.4M code: AWS D1.4/D1.4M:2018—Structural Welding Code— <u>Steel Reinforcing Steel Bars</u>	<b>Accepted.</b>
148.	David P. Gustafson	1.7.3.3	In Line 3, consider replacing "given" with something like "specified".	<b>Accepted.</b>
149.	David P. Gustafson	1.7.3.3(d)	In Optional Requirements Checklist, Line 5, note the term "shear walls". ACI CT-18 uses the format "shearwall".	<b>Accepted.</b>
150.	David P. Gustafson	1.7.6.1(a)	In Line 1, consider deleting "Every". Section 6.3.4 in the Technical Committee Manual says to avoid the use of "every".	<b>Not Accepted.</b> This language is consistent with ACI 318-19. The requirement is that every average and not a single average of strength values must equal or exceed the specified compressive strength.
151.	David P. Gustafson	2.3.1.12	Line 2 of 2.3.1.12 states: ". . . embedded items such that embedded items are positioned within . . ." <b>Discussion</b> - Section 6.3.4 in the Technical Committee Manual says to avoid the use of "such". Consider replacing "such" with "so".	<b>Accepted.</b>
152.	David P. Gustafson	3.1.2.1(g)	Need to confirm cited certification program covers epoxy-coated wire and welded wire reinforcement. Or does it only cover epoxy-coated reinforcing bars. If only the latter, then revise 3.1.2.1(g).	<b>Not Accepted.</b> The existing provisions would apply to any reinforcement product without modification.
153.	David P. Gustafson	3.2.1.6(e)	Revise 3.2.1.6(e): <b>3.2.1.6(e)</b> Zinc-coated (galvanized) welded wire reinforcement shall conform to ASTM A1060/A1060M. Coating damage incurred during shipment, storage, handling, and placing of zinc-coated (galvanized) welded wire reinforcement shall be repaired in accordance with ASTM A780/A780M. Reinforcement shall not be used if area of damaged coating exceeds 2 percent of surface area in <del>any</del> <u>each</u> linear foot of <u>each</u> wire or welded wire reinforcement, including previously repaired areas of damaged coating and excluding cut ends. <b>Discussion</b> – Replacing "any" with "each" and inserting "each" aligns the wording of 3.2.1.6(e) with 3.2.1.2(a), 3.2.1.2(b), 3.2.1.2(c), 3.2.1.5(c) and 3.2.1.6(c).	<b>Accepted.</b>
154.	David P. Gustafson	3.2.1.9	3.2.1.9 states: 3.2.1.9 Mechanical splices—Mechanical splices shall develop at least 125 percent of the specified yield strength of bars being spliced. <b>Discussion</b> – This provision describes only what the 318 Code characterizes as a Type 1 mechanical splice. Revise 3.2.1.9 to include the requirements for Type 2 mechanical splices.	<b>New Business.</b>
155.	David P. Gustafson	3.2.2.2(b)	Correct 3.2.2.2(b): <b>3.2.2.2(b)</b> After completing welds on zinc-coated (galvanized), epoxy-coated, or zinc and epoxy dual-coated <del>reinforcement</del> <u>reinforcing bars</u> , coat welds and repair <u>damaged</u> coating <del>damage</del> in accordance with requirements in 3.2.1.2(a), 3.2.1.2(b), or 3.2.1.2(c), respectively. <b>Discussion</b> - 3.2.2.2(a) is concerned with welding reinforcing bars. Hence in 3.2.2.2(b), replace "reinforcement" with "reinforcing bars". Furthermore, the provisions "3.2.1.2(a), 3.2.1.2(b), or 3.2.1.2(c)" referenced in 3.2.2.2(b) cover coated reinforcing bars. The American Welding Society's D1.4/D1.4M code presents criteria for welding reinforcing bars only--as evidenced by its title. Replace "coating damage" with "damaged coating". In preceding provisions, "damaged coating" is used in conjunction with "repair". In 3.3.2.9(a), 3.3.2.9(b) and 3.3.2.9(c), the wording "repair damaged coating" rather "repair coating damage" is also used.	<b>Accepted.</b>
156.	David P. Gustafson	3.2.2.2(c)	3.2.2.2(c) states:	<b>Accepted.</b>

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No.	Public Commenter Name	Provision No.	Public Comment	Response
			3.2.2.2(c) If welding stainless steel reinforcement, comply with AWS D1.6/D1.6M, <b>Discussion</b> I don't have a copy of AWS D1.6/D1.6M. The 301 specification cites stainless steel reinforcing bars (ASTM A955/A955M in 3.2.1.1(c)), stainless steel wire (ASTM A1022/A1022M in 3.2.1.5(b)), and stainless steel welded wire reinforcement (ASTM A1022/A1022M in 3.2.1.6(d)). Need to confirm that D1.6/D1.6M covers the welding of wire and welded wire reinforcement. If the D1.6/D1.6M code is like the D1.4/D1.4M code, then 3.2.2.2(c) will need to be revised.	
157.	David P. Gustafson	3.3.2.7	Revise the last sentence in 3.3.2.7: ". . . Coat exposed parts of mechanical splices used on coated bars with same material used to repair <u>damaged</u> coating <del>damage.</del> "	Accepted.
158.	David P. Gustafson	3.3.2.8(d)	Revise 3.3.2.8(d): <b>3.3.2.8(d) Repair of bar coatings</b> —After field bending or straightening zinc-coated (galvanized), epoxy-coated, or zinc and epoxy dual-coated reinforcing bars, repair <u>damaged</u> coating <del>damage</del> in accordance with 3.2.1.2(a), 3.2.1.2(b), or 3.2.1.2(c).	Accepted.
159.	David P. Gustafson	3.3.2.9	Correct 3.3.2.9: <b>3.3.2.9 Field cutting reinforcement reinforcing bars</b> —Field cut after acceptance by Architect/Engineer. Do not flame cut coated <u>reinforcing bars</u> or <del>low-carbon chromium reinforcement, including reinforcement</del> complying with ASTM A775/A775M, A934/A934M, A1035/A1035M, or A1055/A1055M, and reinforcing bars complying with ASTM A1035/A1035M. <b>Discussion</b> – 3.3.2.9 and the subsequent 3.3.2.9(a), 3.3.2.9(b) and 3.3.2.9(c) are concerned only with field cutting of reinforcing bars and not with field cutting of wire and welded wire reinforcement.	Accepted.
160.	David P. Gustafson	3.3.2.9(d)	3.3.2.9(d) states: <b>3.3.2.9(d)</b> Flame cutting of stainless steel reinforcement shall be in accordance with field temperature control procedure included with submittal 3.1.2.1(h). <b>Discussion</b> – Does 3.3.2.9(d) cover the flame cutting of wire and welded wire reinforcement? Or it only concerned with reinforcing bars?	Not Accepted.
161.	Chris Adams – Vulcan Materials	4.1.2.3 (b) and 4.2.2.6 (a)	Reference ASTM C1778 or ACI 201 which suggest using ASTM C1260, ASTM C1567 or ASTM C1293 to demonstrate ASR compliance, rather than solely requiring ASTM C1293.	Not Accepted. ACI 201 and ASTM C1778 are documents that do not use mandatory language and cannot be referenced in the specification.
162.	David P. Gustafson	4.2.1.5	Optional Requirements Checklist – In the second paragraph, Lines 9 and 17, should "15%" be replaced with "15 percent"? Or is use of the symbol "%" okay in a Checklist?	Accepted.
163.	David P. Gustafson	4.2.2.4	In Optional Requirements Checklist, delete "placement".	Accepted.
164.	David P. Gustafson	4.2.2.7(a)	Line 6 states: ". . . handled and standard cured in accordance with ASTM C31/C31M" <b>Discussion</b> – Consider deleting the yellow-highlighted "standard".	Not Accepted. The term "standard cured" is important to retain for specimens for acceptance tests.
165.	David P. Gustafson	4.2.2.8	The last sentence states: ". . . Unless otherwise specified, average modulus of elasticity shall <u>be</u> equal to or exceed the specified value." <b>Discussion</b> – Insert "be" as shown above.	Accepted.
166.	David P. Gustafson	4.2.3.4(c)	In "(c)" under 4.2.3.4(c), Line 4, replace "must" with "shall".	Accepted.
167.	David P. Gustafson	4.2.3.6(c)	4.2.3.6 (c) states: <b>4.2.3.6(c)</b> Submit revised mixture proportions for acceptance before placing revised concrete in Work. <b>Discussion</b> – Re-evaluate the wording. The concrete isn't being revised. Rather the mixture proportions are being revised.	Accepted.
168.	David P. Gustafson	4.3.2.1	Line 9 states: "concrete after discharge of more than 5% of delivered quantity." <b>Discussion</b> – Replace "5%" with "5 percent".	Accepted.
169.	David P. Gustafson	5.3.2.4(i)	Line 4 states: "through full floor system depth at least two feet past each face of" <b>Discussion</b> – Replace "two feet" with "2 ft".	Accepted.
170.	David P. Gustafson	5.3.3.3(b)	Line 3 states: "volume portland cement, 1 ½ parts sand meeting the requirements" <b>Discussion</b> – Consider replacing "1 ½" with "1-1/2".	Accepted.
171.	David P. Gustafson	5.3.3.4	5.3.3.4 states: <b>5.3.3.4 Special Finishes</b> —If required, produce special finishes in accordance with Contract Documents.	Accepted.

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No.	Public Commenter Name	Provision No.	Public Comment	Response
			<b>Discussion</b> – Should “ <i>Finishes</i> ” be replaced with “ <i>finishes</i> ”—a lower case “feff”?	
172.	David P. Gustafson	5.3.4.2(f)	Line 4 states: “special wear resistant aggregate is not required.” The Optional Requirements Checklist states: “Specify if special wear resistant aggregate or other materials are required.” <b>Discussion</b> – Should “wear resistant” be hyphenated, i.e., “wear-resistant”?	<b>Accepted.</b>
173.	David P. Gustafson	5.3.4.2(h)	Under 5.3.4.2(h), item (d) states: “(d) Broom finish—For parking slabs and exterior surfaces, including slabs, ramps, walkways, and steps” <b>Discussion</b> – What are “parking slabs”? What are the second “slabs”?	<b>Accepted.</b>
174.	David P. Gustafson	5.3.5	The Mandatory Requirements Checklist is: “Designate locations for sawcut joints and any requirements or restrictions for cutting reinforcement at joints” <b>Discussion</b> – Hyphenate “sawcut”.	<b>Accepted.</b>
175.	David P. Gustafson	6.1.5.2	6.1.5.2 states: <b>6.1.5.2</b> Deliver materials specified in Contract Documents to jobsite in manufacturer’s original containers or packaging. <b>Discussion</b> – Replace “jobsite” with “project site”.	<b>Accepted.</b>
176.	David P. Gustafson	7.1.1	7.1.1 states: <b>7.1.1 Scope</b> —This section covers construction requirements for concrete designated as lightweight concrete in Concrete Documents.	<b>Partially Accepted. Discussion</b> – Replace “section” with “Section”, and replace “Concrete” with “Contract”.
177.	David P. Gustafson	8.1.3	In the Optional Requirements Checklist, note the seven occurrences of the symbol “%”.	<b>Accepted.</b>
178.	David P. Gustafson	8.2.1.1	In the Optional Requirements Checklist, second paragraph, note the two occurrences of “percent”. In the last paragraph, note “65%”.	<b>Accepted.</b>
179.	David P. Gustafson	9.1.1	9.1.1 states: <b>9.1.1 Scope</b> —This section covers construction requirements for structural members designated as post-tensioned concrete in Contract Documents. <b>Discussion</b> – Replace “section” with “Section”.	<b>Accepted.</b>
180.	David P. Gustafson	9.1.3.1(a)	Under 9.1.3.1(a), item (c) states: (c) Size, details, location, materials, and stress grade for tendons and accessories <b>Discussion</b> – Sorry, what is “stress grade for tendons”? Is it related to “minimum tensile strength” of the prestressing steel?	<b>Accepted.</b>
181.	David P. Gustafson	9.1.3.3(a)	9.1.3.3(a) states: <b>9.1.3.3(a)</b> Certified mill test reports for a sample taken from the production lot of prestressing steel used in Work. <b>Discussion</b> – Should “reports” be singular, i.e., “report”?	<b>Not Accepted.</b> Correct as is – could have multiple heats and related reports.
182.	David P. Gustafson	9.2.1.2	Item (b) states: (b) that do not have stressing pockets subject to wetting or direct contact with soils during service. <b>Discussion</b> – Should “soils” be singular? Or should “soils” or “soil” be replaced with ground?	<b>Accepted.</b>
183.	David P. Gustafson	9.3.2.3	Line 4 states: “corrosion protection coating. Coating shall be shop-applied or field-“ <b>Discussion</b> – Should “protection” be replaced with “protective”?	<b>Not Accepted.</b> “Protection” is standard usage in industry.
184.	David P. Gustafson	9.3.2.5(c)	9.3.2.5(c) is: <b>9.3.2.5(c) Duct support spacing</b> —Duct support spacing ( <i>l</i> ) shall conform the following values: (a) Galvanized metal round duct: $l \leq 4$ ft (b) Plastic round duct: $l \leq 2$ ft (c) Plastic flat duct (with strand preinstalled in duct): $l \leq 2$ ft (d) Plastic flat duct (without strand preinstalled in duct): $l \leq 1$ ft <b>Discussion</b> – The notation for duct support spacing needs to be more prominent. Consider replacing: Replace “ <i>l</i> ” (five places) with a script ell $\ell$ Or replace “ <i>l</i> ” (five places) with an upper-case ell $L$	<b>Accepted.</b>
185.	David P. Gustafson	11.2.7	11.2.7 states: <b>11.2.7 Load-transfer devices</b> —If specified, provide load-transfer devices at joints indicated in Contract Documents. <b>Discussion</b> – Replace “Ifspecified” with “If specified”.	<b>Partially Accepted.</b> Change “Ifspecified” to “If specified”

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No.	Public Commenter Name	Provision No.	Public Comment	Response
			The Optional Requirements Checklist states: Specify joints to receive load-transfer devices and indicate acceptable types of devices. Acceptable mechanical load-transfer devices may be smooth dowel bars (round or square) or dowel plates (available in a variety of shapes and installation systems). Steel load-transfer devices require a method to prevent bonding with concrete. <b>Discussion</b> – Consider replacing “smooth” with “plain”.	
186.	David P. Gustafson	12.1.3.5	Consider revising 12.1.3.5: <b>12.1.3.5 Field mockups</b> —If specified, field mockups shall be two panels unless specified otherwise <u>specified</u> . Each panel shall . . .	Accepted.
187.	David P. Gustafson	12.3.9(a)	Item (d), Line 3 states: “mock-up panel when viewed from a distance of 10 ft. in daylight.” <b>Discussion</b> – Replace “10 ft.” with “10 ft”. Delete the period in “ft”.	Accepted.
188.	David P. Gustafson	12.3.17.3	12.3.17.3 states: 12.3.17.3 Unless otherwise specified, panels shall be braced in position until the structural lateral-load-resisting system is complete and final panel attachments are made. <b>Discussion</b> – Consider replacing “structural” with “structure’s”.	Accepted.
189.	David P. Gustafson	13.1.3.1(b)	The second paragraph of 13.1.3.1(b) states: If analysis and design use computer programs, submitted calculations shall include design assumptions, input data, and computer generated output. <b>Discussion</b> – Consider hyphenating “computer generated”.	Accepted.
190.	David P. Gustafson	13.1.5.1	13.1.5.1 states: <b>13.1.5.1</b> Store members to prevent contact with soil, to prevent permanent staining, to control cracking, and to maintain dimensions within specified product tolerance. <b>Discussion</b> – Consider replacing “soil” with “ground”.	Not Accepted.
191.	David P. Gustafson	13.2.5.1(b)	Lines 4-6 of 13.2.5.1(b) state: “measured according to ASTM D2240. Capable of supporting a compressive stress of 3000 psi without cracking, splitting, or delaminating in the internal portions of the pad.” <b>Discussion</b> – Consider replacing “supporting” with “resisting”. Also consider replacing “to ASTM D2240. Capable of” with “to ASTM D2240; capable of” Or consider replacing “to ASTM D2240. Capable of” with “to ASTM D2240, and capable of”	Not Accepted.
192.	David P. Gustafson	13.2.5.1(c)	13.2.5.1(c) states: <b>13.2.5.1(c) Cotton-duck-fabric-reinforced elastomeric pads</b> —Preformed, horizontally-layered, cotton-duck fabric bonded to an elastomer. Surface hardness of 80 to 100 Shore A Durometer measured according to ASTM D2240. Conforming to Division II, Section 18.10.2 of AASHTO LRFD or NAVY MIL-C-882E. <b>Discussion</b> – Consider replacing “according to ASTM D2240. Conforming to Division II, Section” with “according to ASTM D2240; conforming to Division II, Section”, or replacing “according to ASTM D2240. Conforming to Division II, Section” with “according to ASTM D2240, and conforming to Division II, Section”.	Not Accepted. “Conforming” starts a new thought and should not be tied to the previous sentence.
193.	David P. Gustafson	13.2.8.2	Revise 13.2.8.2: <b>13.2.8.2 Normalweight concrete mixtures</b> —Proportion mixtures by laboratory trial mixture or field test data methods according to Section 4 with materials to be used on project to provide normalweight concrete with the following properties, unless <u>otherwise specified otherwise</u> :	Accepted.
194.	David P. Gustafson	13.2.11.4(b)	13.2.11.4(b) states: <b>13.2.11.4(b)</b> Install welded wire reinforcement in lengths as long as practicable. Unless otherwise specified, lap adjoining pieces at least one full wire spacing and use wire to tie laps. Offset laps of adjoining widths to prevent continuous laps in either direction. <b>Discussion</b> – Not keen on “pieces”. Was “sheets” intended?	Not Accepted. Requirement applies equally to partial sheets or segments of sheets cut to fit component geometry. Substituting “sheets” is too limiting.
195.	David P. Gustafson	14.1.3.6(b)	The second paragraph states: If designs use a computer program, submitted calculations shall include design assumptions, input data, and computer generated output. <b>Discussion</b> – Consider hyphenating “computer generated”.	Accepted.
196.	David P. Gustafson	14.1.3.6(c)	14.1.3.6(c) states:	Not Accepted.

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No.	Public Commenter Name	Provision No.	Public Comment	Response
			<p><b>14.1.3.6(c) Design Modifications-</b> If modifications to design in Contract Documents are proposed, submit drawings. If specified, submit design calculations in accordance with 14.1.3.6(b). Maintain specified design requirements if altering size of members or alignment.</p> <p><b>Discussion</b> – Replace “altering” with “changing” or with “modifying” or with “revising”.</p>	Consistent with 13.1.3.1(d) and changing altering to modifying seems redundant with “modifications” being used at start of provision. Other suggested words do not add anything to clarity.
197.	David P. Gustafson	14.2.6.2(g)	<p>14.2.6.2(g) states:</p> <p><b>14.2.6.2(g) Tensile bond strength and resistance to freezing and thawing</b>—Tensile bond strength in accordance with ASTM E488/E488M, as modified in the following two paragraphs, shall not be less than 150 psi before and after freezing-and-thawing testing. Freezing-and-thawing testing in accordance with Method B of ASTM C666/C666M shall be run for 300 cycles and specimens shall show no detectable deterioration.</p> <p><b>Discussion</b> – Not keen on “run”. Consider replacing “run” with something like “conducted”.</p>	<b>Accepted.</b>
198.	David P. Gustafson	14.2.6.2(g)	<p>Second paragraph of 14.2.6.2(g); the last lines state:</p> <p>“bond pattern with a formed raked joint geometry of no less than 3/8 in. wide and a depth no greater than 1/4 in. from the exterior face of brick.”</p> <p><b>Discussion</b> – Consider replacing “no” with “not”.</p>	<b>Accepted.</b>
199.	David P. Gustafson	14.2.6.2(i)	<p>14.2.6.2(i) states:</p> <p><b>14.2.6.2(i) Chemical resistance</b>—Rated not affected when tested in accordance with ASTM C650.</p> <p><b>Discussion</b> – Puzzled by “Rated not affected”. Should “Rated” be replaced with “Rating”? Have some words been inadvertently omitted from the provision?</p>	<b>Accepted.</b>

Questions 21 to 54 137, and 138 were comments on basically the same provision related to chair spacing for WWF. Below is some general information on the topic.

1. The committee entertained the WWR topic during the last cycle and again at the subcommittee level this cycle where they could not find consensus and again through various discussion during the Public Comment period- virtual convention meetings and subsequent webmeetings. Conflict without consensus exists between and within the design, construction, formwork, reinforcing, and placing communities regarding how to support welded wire reinforcement to achieve the minimum requirements of a design.
2. The Committee identified no document with industry, organizational, or governmental guidance from which the Committee could draw inspiration or validate notions about minimally adequate, standard, or best practice for placing and supporting welded wire reinforcement.
3. There was an attempt to use limits from 318-19 and 117 for welded wire fabric- the committee rejected this attempt as WWR does meet standards for reinforcing bars. It is unusual for 301 to not be able to reach some consensus on at least a minimal set of requirements. In this case, the Committee could not reach consensus on any new language regarding welded wire reinforcement, even after significant discussion (see item 1), numerous proposals, and the large number of public comments. It is the feeling of the Committee that additional study (and possibly research) is required to justify the imposition of rules intended to maintain placement tolerances on welded wire reinforcement without resulting in unjustified, significant burden on one or more parties involved in the design and construction of concrete structures. For the time being, the burden remains on the designer to specify tolerances on welded wire reinforcement, as required by ACI 117-10. The burden of finding ways to achieve specified tolerances falls on the construction and construction materials communities.
4. Further direction for New Business- Over the course of the next development cycle for ACI Committee 301, we anticipate significant engagement with ACI committees including 117 (*Tolerances*) and 318 (*Code*), industry (WRI, CRSI, ASCC), and universities or other organizations with analysis and testing capabilities. The goal of this engagement will be to determine a set of appropriate tolerances and the minimum required parameters for correctly supporting welded wire reinforcement to achieve the intent of a design.

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No.	Public Commenter Name	Provision No.	Public Comment	Response
1	Larry Campbell	3.3.2.5(a) & (b)	This provision should be modified. I understand the need to place the reinforcing in the proper position but because wire mesh is thinner than rebar, the rebar and concrete placer will walk on this and bend the mesh and bar support down. Suggest using only W4.0 mesh and larger or rebar for a better traffic support and slab reinforcement.	<b>New Business.</b>
2	Roy H. Keck	4.2.2.6.a	Re ASR and test requirements for concrete mixes I appreciate and understand what the committee is trying to accomplish, setting up a test protocol and expansion limits to qualify aggregates in regard to resistance to alkali attack. A review of applicable documents such as ACI 201 and ASTM STP 169D will very quickly show how difficult the task of simplifying this to one or two acceptance methods. What initiated the need for ASR limits, in my opinion, is the change in ASTM C150 which deleted the low alkali cement designation for marketplace cement. Thus, it now becomes the concrete and aggregate supplier's task to validate ASR performance in concrete. What you will find is a number of ASTM methods that have been developed in pursuit of the perfect test. To apply these methods, there is an established protocol in ACI 201 that is condensed into a flow chart, simple to follow thankfully. From that flow chart, ASTM has created a practice, C 1778 Standard Guide for Reducing the Risk of Deleterious Alkali Aggregate Reaction in Concrete. Rather than subject specifiers/users of 301 to questionable conclusions based on tests which knowingly can draw false conclusions, 301 should follow ASTM C 1778 and ACI 201 on this subject. Specify this protocol (which is referenced in ACI 318 as well). Aggregates in use in concrete likely have already been evaluated by a transportation agency such as state DOT's. New sources in a market may bear more scrutiny, but most all commercial sources have service records which are validated or restricted by these agencies. The ASR requirements in 301 are written as for untried and unproven aggregate sources as the wording now stands. To require the continuing and repetitive re-evaluation of aggregate sources is onerous and unnecessary.	<b>Not Accepted.</b> C1778 and ACI 201 are not written in mandatory language and cannot be referenced in the specification. C1293 data did not exist for most aggregates in the U.S. until recently. The tests we are specifying are the recommended tests from ASTM C1778.
3	George Woodworth	4.2.3.4(c)(f)	No need to put a time limit on a concrete trial if materials have not changed. This is just an added cost to the producer for no good reason.	<b>Not Accepted.</b> The time limit for trial batches is stated in ACI 318 and ACI 301 needs to be consistent.
4	Miroslav Vejvoda	9.1.3.2(e)	The common term is Licensed Design Professional	<b>Withdrawn by commentator.</b>
5	Miroslav Vejvoda	9.1.4.2(b)	Modify to read: "The tensioning crew foreman and at least 50 percent of..."	<b>Accepted.</b>
6	Miroslav Vejvoda	9.1.4.3	Add on the end: "At least 50 percent of grouting personnel shall be certified in accordance with PTI Level 1 Multistrand and Grouted PT Installation Program".	<b>Withdrawn by commentator.</b>
7	Miroslav Vejvoda	9.3.2.5(b)	Mandatory requirement seems contradictory. It says that compressed air shall be blown in but it also says, if specified, ducts shall be air pressure tested. Air pressure testing should not be performed only if specified. Suggestion: "Before grouting, ducts shall be air pressure tested with oil-free, compressed air to identify possible blockages and remove debris that interfere with grout injection".	<b>New business.</b>

No.	Public Commenter Name	Provision No.	Public Comment	Response
1.	David P. Gustafson	1.4.1.2	<p>Article 1.4 is Reference standards April 28, 2020</p> <p>Article 1.4.1.2 is ASTM International standards</p> <p>Included in Article 1.4.1.2 on Page 9 is:</p> <p style="padding-left: 40px;">ASTM A1094/A1094M-18 Standard Specification for Continuous Hot-Dip Galvanized Steel Bars for Concrete Reinforcement</p> <p><b>Discussion</b></p> <p>The first edition of ASTM A1094/A1094M was published in 2015.</p> <p>In November 2015, I prepared and sent a Change Submittal to Subcommittee B of Committee 318 to add ASTM A1094/A1094M to the 318-19 Code.</p> <p>Subsequently in early 2016, Sub B balloted the Change Submittal as CB100 in Ballot CB16-01.</p> <p>Cb100 drew a negative. The negative voter's objection:</p> <p style="padding-left: 40px;">"By including the new A1094 specification it is assumed that the new coating system is equivalent to that of A767. There is no reference that says the two galvanized bars are equivalent. I canNot Accepted the change unless there is a reference showing equivalence."</p> <p>My response to the negative: At this time, I am unable to furnish a reference to confirm that the new coating system is equivalent to that of ASTM A767. The galvanizing industry is expected to fund a research program on</p>	<b>Accepted.</b>

		<p>corrosion resistance of the galvanized bars. Thus, I respectfully request Sub B to table action on CB100, and subsequently, provide an opportunity to re-visit CB100 when the results of the research are disseminated. Imagine! Some four years have passed and still no results of research reported in the public domain. Since 2016, I have been checking with the galvanizing industry on the status of the research on the galvanized bars. Earlier this month, I was informed accelerated corrosion testing of the galvanized bars is underway.</p> <p><b>Further Discussion</b></p> <p>I suggest not to include ASTM A1094/A1094M in the next edition of the 301 specifications. The results of the research program on accelerated corrosion testing are needed before the committee can make an informed decision on whether to adopt the ASTM standard in 301.</p> <p>Thus in Article 1.4.1.2 on Page 9, delete:</p> <p style="padding-left: 40px;"><del>ASTM A1094/A1094M-18 Standard Specification for Continuous Hot-Dip Galvanized Steel Bars for Concrete Reinforcement</del></p> <p>And in Article 3.2.1.2 (a), delete “or ASTM A1094/A1094M” (two places):</p> <p><b>3.2.1.2(a)</b> Zinc-coated (galvanized) reinforcing bars shall conform to ASTM A767/A767M <del>or ASTM A1094/A1094M</del> and other requirements as specified in Contract Documents. Coating damage incurred during shipment, storage, handling, and placing of zinc-coated (galvanized) reinforcing bars shall be repaired in accordance with ASTM A780/A780M. Damaged areas shall not exceed 2 percent of surface area in each linear foot of each bar or bar shall not be used. The 2 percent limit on maximum allowed damaged coating area shall include previously repaired areas damaged before shipment as required by ASTM A767/A767M <del>or ASTM A1094/A1094M</del>.</p>	
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