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AGENDA

ACI 301—Specifications for Structural Concrete

Subcommittee A
General Requirements, Definitions, Tolerances

Sunday November 5, 2006
1:00 PM – 5:00 PM, Biltmore
Adam's Mark Hotel, Denver, CO

1. Call to Order
2. Self-introductions (Exhibit 2)
3. Approval of minutes of spring meeting in Charlotte
4. Report on Comparison of Definitions in ACI 301 (Exhibit 4)
5. Review main ballot results
    a. Full committee ballot 06-3 (Exhibit 5)
6. New business
7. Adjourn

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Comparison of Definitions in ACI 310-05 with other ACI documents

Term	301-05	ACI Specification Manual	318-05	116-00
acceptable or **accepted**	Acceptable to or accepted by the Architect/Engineer.	determined to be satisfactory by Architect/Engineer.		
ACI Concrete Field Testing Technician Grade 1	A person who has demonstrated knowledge and ability to perform and record the results of ASTM standard tests on freshly mixed concrete and to make and cure test specimens. Such knowledge and ability shall be demonstrated by passing prescribed written and performance examinations and having credentials that are current with the American Concrete Institute.			
Architect/Engineer or **Engineer/Architect**	The Architect, Engineer, architectural firm, engineering firm, or architectural and engineering firm issuing project drawings and specifications or administering work under the Contract Documents.	the architect, engineer, architectural firm, or engineering firm issuing Contract Documents or administering the Work under Contract Documents, or both.	***Registered design professional*** — An individual who is registered or licensed to practice the respective design profession as defined by the statutory requirements of the professional registration laws of the state or jurisdiction in which the project is to be constructed.	**architect-engineer** or **engineer-architect**—the architect, engineer, architectural firm, engineering firm, or architectural and engineering firm issuing project drawings and specifications, or administering the work under contract specifications and drawings, or both.
architectural concrete	Concrete that is exposed as an interior or exterior surface in the completed structure and is designated as architectural concrete in the Contract Documents; contributes to visual character of the completed structure and therefore requires special care in the selection of the concrete materials, forming, placing, and finishing to obtain the desired architectural			**concrete, architectural**—concrete that will be permanently exposed to view and therefore requires special care in selection of the concrete materials, forming, placing, and finishing to obtain the desired architectural appearance.

Term	301-05	ACI Specification Manual	318-05	116-00
	appearance.			
backshores	Shores placed snugly under a concrete slab or structural member after the original formwork and shores have been removed from a small area at a time, without allowing the slab or member to deflect, or support its own weight or existing construction loads from above.			shores placed snugly under a concrete slab or structural member after the original formwork and shores have been removed from a small area without allowing the entire slab or member to deflect or support its own mass or existing construction loads.
cement, expansive	A cement that, when mixed with water, produces a paste that, after setting, tends to increase in volume to a significantly greater degree than does portland cement paste; used to compensate for volume decrease due to shrinkage or to induce tensile stress in reinforcement.			a cement that, when mixed with water, produces a paste that, after setting, increases in volume to a significantly greater degree than does portland-cement paste; used to compensate for volume decrease due to shrinkage or to induce tensile stress in reinforcement (post-tensioning).
cement, expansive Type K	A mixture of portland cement, anhydrous tetracalcium trialuminate sulfate (C4 A3S•), calcium sulfate (CaSO4), and lime (CaO); the C4A3S is a constituent of a separately burned clinker that is interground with portland cement, or alternatively, is formed simultaneously with the portland-cement clinker compounds during the burning process.			anhydrous tetracalcium trialuminate sulfate (C4A3S), calcium sulfate (CaSO4), and lime (CaO); the C4A3S is a constituent of a separately burned clinker that is interground with portland cement or alternately, it may be formed simultaneously with the portland-cement clinker compounds during the burning process;
Contract Documents	A set of documents supplied by Owner to Contractor as the basis for construction; these documents contain contract forms, contract conditions, specifications, drawings, addenda, and contract changes.	a set of documents supplied by Owner to Contractor as the basis for construction; these documents contain contract forms, contract conditions, specifications, drawings, addenda, and contract changes.		**documents, contract**— documents comprising aspects of the required work and the results and products thereof, including plans, specifications, and project drawings.

Term	301-05	ACI Specification Manual	318-05	116-00
Contractor	The person, firm, or entity under contract for construction of the Work.	the person, firm, or entity under contract for construction of the Work.		
duct			A conduit (plain or corrugated) to accommodate prestressing steel for post-tensioned installation.	
exposed to public view	Situated so that it can be seen from a public location after completion of the building.			
high-early-strength concrete	Concrete that is capable of attaining specified strength at an earlier age than 28 days through the use of high-early-strength cement or admixtures.			
lightweight concrete	Concrete of substantially lower density than normal weight concrete.			
mass concrete	Any volume of concrete with dimensions large enough to require that measures be taken to cope with generation of heat from hydration of the cement and attendant volume change to minimize cracking.			
mass concrete, plain	Mass concrete containing no reinforcement or less reinforcement than necessary to be considered reinforced mass concrete.			
mass concrete, reinforced	Mass concrete containing adequate prestressed or nonprestressed reinforcement to act together with the concrete in resisting forces including those induced by temperature and shrinkage.			
normal weight concrete	Concrete having a density of approximately 150 lb/ft3 made			

Term	301-05	ACI Specification Manual	318-05	116-00
	with gravel or crushed stone aggregates.			
Owner	The corporation, association, partnership, individual, public body, or authority for whom the Work is constructed.	the corporation, association, partnership, individual, public body, or authority for whom the Work is constructed.		the corporation, association, partnerships, individual, or public body or authority with whom the contractor enters into an agreement and for whom the work is provided.
permitted	Accepted or acceptable to the Architect/Engineer; usually pertains to a request by the Contractor, or to an item specified in the Contract Documents.	accepted or acceptable to Architect/Engineer, usually pertaining to a request by Contractor, or when specified in Contract Documents.		
post-tensioning	A method of prestressing reinforced concrete in which tendons are tensioned after the concrete has hardened.		Method of prestressing in which prestressing steel is tensioned after concrete has hardened.	
prestressed concrete	Concrete in which internal stresses of sufficient magnitude and distribution are introduced to counteract to a desired degree the tensile stresses resulting from the service loads; in reinforced concrete, the prestress is commonly introduced by tensioning the tendons.		Structural concrete in which internal stresses have been introduced to reduce potential tensile stresses in concrete resulting from loads.	
project drawings	Graphic presentation of project requirements.	graphic presentation of project requirements.		
project specifications	The written document that details requirements for the Work in accordance with service parameters and other specific criteria.	the written document that details requirements for the Work in accordance with service parameters and other specific criteria.		
reference specification	A standardized mandatory language document prescribing materials, dimensions, and workmanship, incorporated by	a standardized mandatory-language document prescribing materials, dimensions, and workmanship, incorporated by		

Term	301-05	ACI Specification Manual	318-05	116-00
	reference in Contract Documents, with information in the Mandatory Requirements Checklist required to be provided in the Project Specification.	reference in Contract Documents, with information in the Mandatory Requirements Checklist required to be provided in the Project Specification. Discussion: The modifier "reference" is used to denote a specification that is incorporated by reference in Contract Documents. The word "reference" shall not appear in the specification title and the document shall be titled "Specification for…." **Note: This appears in the terms used in the Specification Manual.**		
reference standards	Standardized mandatory-language documents of a technical society, organization, or association, including codes of local or federal authorities, which are incorporated by reference in Contract Documents.	standardized mandatory-language documents of a technical society, organization, or association, including codes of local or federal authorities, which are incorporated by reference in Contract Documents.		
required	Required in this Specification or the Contract Documents.	required in this reference specification or Contract Documents.		
reshores	Shores placed snugly under a stripped concrete slab or other structural member after the original forms and shores have been removed from a large area, thus requiring the new slab or structural member to deflect and support its own weight and existing construction loads applied before the installation of		Shores placed snugly under a concrete slab or other structural member after the original forms and shores have been removed from a larger area, thus requiring the new slab or structural member to deflect and support its own weight and existing construction loads applied prior to the installation of the reshores.	**reshoring**—the construction operation in which the original shoring or posting is removed and replaced in such a manner as to avoid deflection of the shored element or damage to partially cured concrete.

Term	301-05	ACI Specification Manual	318-05	116-00
	the reshores.			
sheathing, prestressing	A material encasing prestressing steel to prevent bonding of the prestressing steel with the surrounding concrete, to provide corrosion protection, and to contain the corrosion-inhibiting coating.		A material encasing prestressing steel to prevent bonding of the prestressing steel with the surrounding concrete, to provide corrosion protection, and to contain the corrosion inhibiting coating.	**sheath**—an enclosure in which post-tensioning tendons are encased to prevent bonding during concrete placement. (See also **duct**.)
sheathing, wood formwork	The materials forming the contact face of forms; also called lagging or sheeting.			**sheathing**—the material forming the contact face of forms; also called lagging or sheeting.
shop drawing	A drawing that provides details for a particular task that is developed by the Contractor and reviewed by the Engineer. The shop drawing is prepared to the requirements of the project drawings and project specifications.			
shore	A temporary support designed to support formwork, fresh concrete, and construction loads from above for recently built structures that have not developed full design strength.		***Shores*** — Vertical or inclined support members designed to carry the weight of the formwork, concrete, and construction loads above.	props or posts of timber or other material in compression used for the temporary support of excavations, formwork, or unsafe structures; the process of erecting shores.
strength test	The average of the compressive strengths of two or more cylinders made from the same sample of concrete and tested at 28 days or at the specified test age.		average of two cylinders (**5.6.3.3**)	**test, compression**—test made on a test specimen of mortar or concrete to detemrine the compressive strength; in the U.S., unless otherwise specified, compression tests of mortars are made on 2 in. (50 mm) cubes and compression tests of concrete are made on cylinders 6 in. (152 mm) in diameter and 12 in. (305 mm) high.
structural lightweight concrete	Structural concrete made with lightweight aggregate; the		***Concrete, structural lightweight*** — Concrete containing	concrete, structural lightweight—structural concrete made with

Term	301-05	ACI Specification Manual	318-05	116-00
	equilibrium density, as calculated by ASTM C 567, usually is in the range of 90 to 115 lb/ft3 with a minimum compressive strength of 2500 psi.		lightweight aggregate that conforms to 3.3 and has an equilibrium density as determined by "Test Method for Determining Density of Structural Lightweight Concrete" (ASTM C 567), not exceeding 115 lb/ft3. In this code, a lightweight concrete without natural sand is termed "all-lightweight concrete" and lightweight concrete in which all of the fine aggregate consists of normal weight sand is termed "sand-lightweight concrete."	low-density aggregate; having an air-dry density of not more than 115 lb/ft3 (1850 kg/m3) and a 28-day compressive strength of more than 2500 psi (17.2 MPa).
submitted	Documents or materials provided to Architect/ Engineer for review or acceptance.	**submit**-- provide to Architect/Engineer for review or acceptance. **submittal**-- document or material provided to Architect/Engineer for review or acceptance.		
Work	The entire construction or separately identifiable parts thereof required to be furnished under Contract Documents.	the entire construction or separately identifiable parts thereof required to be furnished under Contract Documents.		

Subcommittee A Items on Main Committee Ballot 06-03

Item #	Subject	Section	Affirmative	Affirmative with Editorial Comments	Negative	Abstain	Not Returned
1	"boiler-plate" material	Synopsis, keywords, Preface, Forward to Checklists	22	7			4
2	Scope	1.1	27	1	**1**		4
3	Definitions	1.2	13	8	**7**	1	4
4	Add URLs	1.4	25	2		2	4
5	Submittal-General	1.5	18	5	**5**	1	4
6	Quality Control by Contractor	1.6.1 – 1.6.3	22	4	**2**	1	4
7	Owner's Testing Agency	1.6.4	19	6	**3**	1	4
8	Acceptance Testing	1.6.5 – 1.6.7	17	6	**5**	1	4
9	Field Acceptance	1.6.8	22	4	**3**		4
10	Acceptance and Protection of Structure	1.7 and 1.8	19	4	**4**	2	4

L. Name	Item	Page	Ref #	N or E	Comment	Subcommittee Response
Sherman (NV)					1. Chapters 6, 7, 11, and 12: Coordinate content and wording of 6.1.1.1/6.1.1.3, 7.1.1, 10.1.1/10.1.2, 11.1.1/11.1.2. (Similar content but handled differently in each chapter.) 2. Verify "Mandatory" vs "Optional" requirements checklists - if it is optional to use the type of concrete covered by a given chapter, but it is mandatory to identify areas such concrete is to be used when it is required to be used, is designating the areas on the Contract Documents mandatory or optional? (See 11.1.2 vs 6.1.1.1, 7.1.1, and 10.1.2)	
Ardahl	1	2	1	E	In the first and second line delete the words "the Engineer or Architect" and replace with the words "Architect/Engineer"	
Lee	1	2	1	E	Strict interpretation of revised wording limits spec to structural concrete – not sure how lawyer would interpret. We should also have a definition of structural	

L. Name	Item	Page	Ref #	N or E	Comment	Subcommittee Response
					concrete (is slab-on-ground to be considered structural by 301?)	
Pergalsky	1		1	E	strike "can make applicable." Change to "can apply"	
Lobo	1	3	10	E	Do not delete “the verb “may” or,” This identifies an option is available to the contractor	
McCall	1	3	10	E	The items that were balloted are part of the checklist which is mandated by TSC; therefore, if there is a change in the TSC manual, we will be required to use that language or to get a variance. I noticed that we have deleted the verbiage pertaining to may that gives the contractor a choice, my only concern is that if we continue to use this in the document, then we need an explanation.	
Lee	1	5	27	E	Why is reference specification listed here? Should 306R be referenced instead?	
Chrzanowski	1		28	E	Change the word "for" with the word "to".	
Wilson	1	5	29	E	Consider Referencing new edition of SP-2 (to be published in ’07?)	
Carino	1	5	34	E	Hyphenate “Slabs-on-Ground”.	
Wilson	1	7	52	E	PCA’s zip code is 60077.	
Gajda (NV)	2				Heavyweight shielding concrete is often considered mass concrete, and should be subjected to the requirements of Section 8.	
Parnes	2			E	Tilt Up concrete strikeout should be removed	
Lee	2	2	5	N	Addition does not clarify – list the particular ASTM specs. If A/E wants precast element to comply with ASTM spec, why would he refer to ACI 301?	
Lee	2	2	6	E	Is the intent of 301 to exclude all heavyweight concrete or heavyweight “shielding” concrete?	
Ardahl	3	All		N	General **NEGATIVE** concerning entire section 1.2-Definitions. Do not list definitions like they were in a dictionary list them exactly as they appear in the document. This is a specification and the terms should be listed as used in the text. There is no need for all the cross referencing because of the attempt to put the adjective modifiers after the noun. Also some of the terms that have been modified in this manual should never be modified in this way even in a dictionary. An example is Contract Documents should never be written in any other way. Revise all definitions to list them only in the format used in the text.	
Gajda (NV)	3				#16 - I like the definition for mass concrete. Subcommittee D may want to modify it. #17 - Is "normalweight" one word or two? I think should be two words.	

L. Name	Item	Page	Ref #	N or E	Comment	Subcommittee Response
Gustafson	3	2		N	The terms in Article 1.2 should be identical to those that appear in the body of the document, e.g., “Contract Documents” should appear in 1.2 rather than “Documents, Contract”.	
Jaycox	3			N	add a reference to :Concrete and Reinforcing Inspector: 'ACI Certified Concrete Construction Special Inspector' We have the Field Technician, we should have the Inspector.	
McCall	3			E	The items that were balloted are part of the checklist which is mandated by TSC; therefore, if there is a change in the TSC manual, we will be required to use that language or to get a variance. I noticed that we have deleted the verbiage pertaining to may that gives the contractor a choice, my only concern is that if we continue to use this in the document, then we need an explanation.	
Parnes	3			E	Technician Grade I, correct spelling "Field"	
Wagner (NV)	3	2	3	E	Suggest deleting ‘is in accordance with this Specification and’. Submittals could be received for products or materials that do not fully comply with the specification but may still be deemed acceptable by the A/E for a specific project.	
Ardahl	3	2	4	N	Do not delete, keep the original with no change.	
Ardahl	3	2	6	N	Do not delete, keep the original with no change.	
Ardahl	3	2	8	N	Do not delete, keep the original with no change.	
Tarr	3	2	8	E	Add definition of “Blended Aggregate Gradation” from new Section 11	
Ardahl	3	3	10	N	Do not list term in this manner.	
Ardahl	3	3	11	N	Do not delete, keep the original with no change.	
Ardahl	3	3	12	N	Do not delete, keep the original with no change. Also all concrete exposed to view is not necessarily architectural concrete.	
Chrzanowski	3		12	E	Although good idea to be consistent with Committee 116, consider working with 116 Committee to establish differentiation between "concrete, exposed to view" versus "concrete, architectural". "Concrete, architectural" is something that requires high-end finish, typically limited to areas that are exposed to public view, and should be clearly designated on Contract Documents (similar to AISC requirements for AESS). Example ... by definition in ACI 116, the portion wall above water line in a wastewater treatment plant is "concrete, architectural".	
Hanskat	3	3	12	N	We need to add back "and is designated as architectural concrete in the Contract Documents". Otherwise, all concrete in view becomes architectural and then requires "special care."	
Wagner (NV)	3	3	12	E	After “exposed to view’ suggest adding ‘and is designated as architectural concrete in the Contract Documents’. Definition is too broad otherwise.	
Ardahl	3	3	13	N	Do not list term in this manner.	
Ardahl	3	3	14	N	Do not delete, keep the original with no change.	

L. Name	Item	Page	Ref #	N or E	Comment	Subcommittee Response
Haught	3		14	E	revise to read concrete, high-early-strength -- concrete which, through the use of additional cement, high-early-strength cement or admixtures ...	
Ardahl	3	3	15	N	Use the term structural lightweight concrete since this is a specification that covers structural concrete. Throughout the text once the term structural is stated the use of lightweight concrete is acceptable.	
Wagner (NV)	3	3	15	E	Suggest changing '115' to '120'. ACI 213R definition of lightweight concrete indicates equilibrium density can be between 70 and 120 pcf. Also, many UL assembly fire ratings are based on slab systems with lightweight concrete having densities of 114 to 120 pcf (e.g. UL D902).	
Wilson	3	4	15	E	Subcommittee D will discuss any suggested modifications.	
Ardahl	3	3	16	N	Do not list term in this manner.	
Carreira	3		16	E	Add " from cement heat of hydration"	
Lobo	3	4	16	E	This does not improve the defn for the user. Suggest that the concept of "measures be taken to cope with…" be retained. If the list includes deleterious chemical reactions, then a 4-in thick slab can be considered mass concrete.	
Wagner (NV)	3	3	16	E	In first line after 'concrete' suggest adding 'designated as mass concrete in the Contract Documents'.	
Wilson	3	4	16	E	Good work on redefining Mass Concrete! Subcommittee D will discuss any suggested modifications.	
Ardahl	3	4	17	N	Do not list term in this manner.	
Carreira	3		17	E	And Ref 15. Add "fresh bulk density."	
Ardahl	3	4	18	N	Do not list term in this manner.	
Ardahl	3	4	19	N	Do not list term in this manner.	
Lobo	3	4	19	E	Does not convey the message of tensioning steel. Shrinkage compensating concrete can fit this defn. Suggest referring to the defns of pretension and post-tension.	
Ardahl	3	4	20	N	Do not list term in this manner.	
McCall	3	4	20	E	Shrinkage compensating concrete, as specified in this specification, can only be made using ASTM C 845 cement	
Ardahl	3	4	21	N	Do not list term in this manner.	
Gustafson	3	4	21	N	I am not keen on ". . . a member to carry loads . . ." Structural members do not "carry loads"; they resist loads.	
Lobo	3	4	21	E	A sidewalk carries loads. It will fit this definition.	
Ardahl	3	4	23	N	Do not list term in this manner.	
Lee	3	4	23	E	We are not defining any other documents. Contract Documents is specific and should be listed as such.	
Ardahl	3	5	24	N	Do not list term in this manner.	

L. Name	Item	Page	Ref #	N or E	Comment	Subcommittee Response
Wagner (NV)	3	3	24	E	Does this sentence read better as follows? - 'a drawing that provides details for a particular task that is prepared by the Contractor in accordance with the project drawings and project specifications and is reviewed by the Architect/Engineer.'	
Ardahl	3	5	25	N	Do not list term in this manner.	
Carino	3	5	25	E	"Drawings, Project" should appear before "drawings, shop." Check all terms for proper alphabetic order.	
Hanskat	3	5	26	E	Prefer to say "void" instead of "hole".	
Neff	3	5	26	N	The proposed definition is not correct in that the tendon is the entire assembly including the duct (see definition of tendon). Also, as presently being formulated, Section 9 will address duct requirements such as materials, wall thickness etc. These requirements do not apply if a duct is defined as a "hole". The purpose of the duct is to create a hole. Suggest that a duct be defined as "the material creating a conduit to accommodate …"	
Tarr	3	5	26	E	Add definition of "Concrete Drying Shrinkage" from new Section 11	
Ardahl	3	5	28	N	Do not list term in this manner.	
Ardahl	3	5	29	N	Use the term shop drawings. There is no need to have another term. Changed in prestressed section.	
Gustafson	3	5	29	N	I note the addition of "installation drawings". Need to also add "placing drawings".	
Tarr	3	5	29	N	Add definition of "Industrial Floor Slab" from new Section 11	
Ardahl	3	5	30	N	Do not list term in this manner. What is the minimum density for the structural lightweight concrete?	
Ardahl	3	5	31	N	Do not list term in this manner.	
Ardahl	3	5	34	N	Do not list term in this manner.	
Carreira	3		37	E	Substitute "prescribed minimum in place strength" by "specified strength at stressing." reason there is not such a thing as "prescribed minimum in place strength."	
Chrzanowski	3		37	E	Delete comma after the word "age".	
Neff	3	6	37	E	The word "reinforced" in the 1st line is unnecessary.	
Carreira	3		38	E	use "reinforcement" in lieu of "steel".	
Ardahl	3	6	39	N	Do not list term in this manner.	
Ardahl	3	6	40	N	Do not list term in this manner.	
Ardahl	3	6	41	N	Do not list term in this manner.	
Carino	3	6	41	E	Use capitals for term.	
Chrzanowski	3		41	E	Capitalize Drawings, Project.	
Ardahl	3	6	42	N	Do not list term in this manner.	

L. Name	Item	Page	Ref #	N or E	Comment	Subcommittee Response
Ardahl	3	6	43	N	Use the definition from ACI Committee 121. That definition in ACI 121 is based on the ISO standards. Do not use an AASHTO definition. The ACI 121 applies to 318 type structures. Use the following ACI 121 definition: *ACTIONS TAKEN TO PROVIDE ASSURANCE THAT WHAT IS BEING DONE AND WHAT IS BEING PROVIDED ARE IN ACCORDANCE WITH APPLICABLE CODES, STANDARDS, CONTRACT REQUIREMENTS, AND STANDARDS OF GOOD PRACTICE.*	
Lee	3	6	43	N	Quality Assurance deals with activities associated with the Owner or the Owner's representatives. Revise as follows: after "systematic actions" insert performed by the Owner or Owner's representative"	
Ardahl	3	6	44	N	Use the definition from ACI Committee 121. That definition in ACI 121 is based on the ISO standards. Do not use an AASHTO definition. The ACI 121 applies to 318 type structures. Use the following ACI 121 definition: *ACTIONS TAKEN BY AN ORGANIZATION PRODUCING A PRODUCT TO PROVIDE EVIDENCE THAT THE PRODUCT MEETS THE APPLICABLE CODES, STANDARDS, AND CONTRACT REQUIREMENTS.*	
Ardahl	3	6	45	N	Do not list term in this manner.	
Carino	3	6	45	E	If the revision is approved, this entry should be put into correct alphabetic order.	
Ardahl	3	7	46	N	Use the term and definition as originally written.	
Ardahl	3	7	49	N	Do not list term in this manner.	
Carreira	3		49	E	Add, "see duct."	
Ardahl	3	7	50	N	Do not list term in this manner.	
Ardahl	3	7	51	N	Do not list term in this manner.	
Hanskat	3	7	52	E	We deleted "from above" previously. Shouldn't we here too?	
Ardahl	3	7	53	N	Do not list term in this manner.	
Ardahl	3	7	54	N	Do not list term in this manner.	
Lobo	3	7	54	E	Delete as suggested. This should not be restricted to ACI specs since it addresses materials etc that are covered by ASTM.	
Tarr	3	7	54	N	Add definition of "Slab-On-Ground" from new Section 11	
Ardahl	3	7	55	N	Do not list term in this manner.	
Lee	3	7	55	E	If we are defining something that is specific, shouldn't it be listed as "Project Specifications" and not Specifications, Project?	
Ardahl	3	8	56	N	Do not list term in this manner.	
Ardahl	3	8	57	N	Do not list term in this manner.	
Ardahl	3	8	58	N	Use the term structural lightweight concrete since this is a specification that covers structural concrete. Throughout the text once the term structural is	

L. Name	Item	Page	Ref #	N or E	Comment	Subcommittee Response
					stated the use of lightweight concrete is acceptable.	
Lee	3	8	59	N	Definition of "submit" has always been for "review **and** acceptance". Changing "and" to "or" requires a decision to be made and placed in every article that requires a submittal as to whether it is for review or acceptance. Otherwise the A/E must indicate what is to be done with the submittal in the project spec. In later changes to the architectural section, some items are indicated for review and information – what does this terminology require of the contractor and the A/E? Actually, any submittal carries an acceptance whether it is a formal acceptance or an implied one. It you don't want to know, don't require a submittal. We are adding confusion to the spec as to what a submittal is for. Go back to "review and acceptance".	
Ardahl	3	8	61	N	Do not list term in this manner.	
Ardahl	3	8	63	N	Do not list term in this manner.	
Hanskat	3	8	63	E	Insert "previous" to help clarify.	
Lee	3	8	63	N	A check test can be performed to verify an acceptable test result, not just a failing test. Revise: "Test performed as a check or verification of an earlier test result."	
Lobo	3	8	63	E	Suggest a test that is repeated to verify…	
Ardahl	3	8	64	N	Do not list term in this manner.	
Ardahl	3	8	65	N	Add "or equivalent program" to comply with code. Correct the word "field" in title.	
Lobo	3	8	65	E	Revise Filed to Field	
Gustafson	3	9	66	E	In the first line, I am not keen on the word "elements". In the second line, replace "jobsite" with "project site".	
Tarr	3	9	67	E	Add definition of "Maximum Size Aggregate (MSA)" from new Section 11	
McCall	4			E	Shrinkage compensating concrete, as specified in this specification, can only be made using ASTM C 845 cement	
Tarr	4	1	8	E	Is PCA not referenced anywhere in this document?	
Ardahl	5	2	1	N	Revise the sentence to comply with the ACI Spec Manual as follows: "Unless otherwise specified, submit required submittals for review and acceptance."	
Lee	5	2	1	N	Change "or" to "and" See item 3 ref. 59 above	
Ardahl	5	2	2	E	Delete the word "the" from before the word "owner and architect/engineer.	
Chrzanowski	5		2	E	Consider adding "Special Inspector" to the to those who Owner may distribute copy to. Distribution to SI is required under Chapter 17 of IBC for structures requiring special inspection.	
Engelman	5	2	2	E	There needs to be in 301 specifications a mandatory submittal that the contractor, placing contractor and producer be notified of any marginal or failed	

L. Name	Item	Page	Ref #	N or E	Comment	Subcommittee Response
					test result. This protects both the owner, the contractor and the producer from proceeding on the project when problems could occur. This is not covered in present 301 specifications.	
Gustafson	5	2	2	N	I do not support replacing "seven days" with the vague requirement of "timely basis". ACI standards committees have the authority to take exceptions to vague requirements in referenced materials' standards.	
Hanskat	5	2	2	N	I'm confused. At the beginning we say the Owner may distribute to the concrete supplier, yet in the last sentence we say they will be provided. We need to either make it optional or mandatory. Not both.	
Haught	5		2	N	Delete the change "who may distribute copies to the". The specification is a set of instructions to the contractor. The contractor may elect to use the QA samples to supplement his QC, and is a pertinent cost consideration during bidding.	
Lee	5	2	2	N	Revisions made contradict rationale and earlier definition of "submittal". First part of article requires submittals be made to the Owner who, at his option, may distribute to others. The last sentence, however, requires the Owner to submit test results to the concrete supplier in a reasonable time. We need to also realize that the contractor can have a testing agent and article 1.5.2 applies to that test lab also. Since the A/E, the Owner's representative, is writing the spec and is defined as the one to whom submittals should be made, it would make more since for this section to have all submittals made to the A/E who would in turn distribute to others. This would apply to all testing agencies performing tests and inspections.	
Neff	5	1	2	E	It should be noted for future consideration that if Section 9 is approved as currently drafted, the Post-Tensioning Institute will need to be added to this list.	
Wilson	5	2	2	E	Stating "on a timely basis" is too open-ended. Recommend removing statement of time if it does not pertain to the contractor's responsibilities.	
Ardahl	5	2	3	N	Change this to an optional requirement. Revise the spec text by adding the words "When required, submit …". Not all owners and Architect/Engineers will want or are permitted to review a quality control plan based on liability insurance. ACI must not require this type of plan be submitted. Add the the following: "**O** Specifiy when the contractor will be required to submit a Quality Control Plan".	
Gustafson	5	2	3	E	Re-evaluate the term "offsite producers".	
Hanskat	5	2	3	N	Should we mandate a Quality control plan be submitted? All materials is too broad. Can we adjust to make the scope reasonable.	
Lobo	5	2	3	E	What is the reference to "offsite producers"? It does not seem to fit here. Suggest the submittal item to indicate "contractor's Quality control plan for construction means and methods" to differentiate from that of the producers	

L. Name	Item	Page	Ref #	N or E	Comment	Subcommittee Response
					requested later.	
Gajda (NV)	6				no comment	
Lee	6	2	3	N	Are there testing agencies that test concrete that don't need to meet ACI 309 requirements? Delete phrase "for acceptance" in first sentence. The term "accredited" implies that there is an official endorsement by some organization that test agency meets C309 requirements; if yes, what is organization? Otherwise revise back to original wording.	
Lobo	6	2	3	E	Accreditation of labs is not common. Suggest retaining "shall meet the requirements of C 1077" Indicate that these testing agencies are involved in quality assurance for the owner to differentiate between that of the contractor's testing gagency.	
Lobo	6	2	6	E	In ORC – stop at "are required." And delete the rest. The example of an owners testing lab establishing mixture proportions is not something that should be promoted by ACI! It is suggested as one example in a potential incomplete list.	
Lobo	6	2	7	E	Suggest adding "through the concrete supplier" at the end.	
Engelman	6	3	9	N	48 hours is not realistic. As changing schedules and weather variations the contractor in many cases does not have a 48 hour window. It would result in project delays or the contractor in non-compliance with the 301 specifications. I would suggest a target of 48 hours in advance of placement.	
Lee	6	3	9	N	48-hr notification will not always be possible. Notification is not only for change in construction schedule; it is also to inform testing agency that scheduled placement will be made. Minimum 24-hr notice should be possible – change back to 24 hr.	
Haught	6		10	E	1.6.2.2.d The contractors obligation for adequate facilites on the site for curing should be limited to providing space and power (if required). The owner's lab is paid to test and as such should be responsible for the cost associated with curing boxes, etc...	
Lobo	6	3	10	E	We do not say who is the quality assurance testing agency	
Chrzanowski	6		11	E	Does this conflict with 90 day requirement for aggregates found in Paragraph 4.1.2.3 and expansion test in Item 26 Ref 23? Consider adding an unless specified otherwise.	
Lee	6	3	11	N	Time restriction should go in section 4, not here. Go back to original wording.	
Lobo	6	3	12	E	Delete "and provide copies … Work". This is covered in 1.6.2.2.e.	
Prenger	6		13	E	On 13, under checklist, S, I understand the intent of the change but the sentence needs to be clarified.	
Lobo	6	4	14	E	Suggest Contractor<u>, or the concrete supplier,</u> shall provide the necessary testing services… Delete "such as Owners testing…" for reason stated for ref 6	

L. Name	Item	Page	Ref #	N or E	Comment	Subcommittee Response
Chrzanowski	6		16	E	Delete second period at end.	
Ardahl	7	All		N	General **NEGATIVE** concerning entire section. This proposed change was generally discussed during the recent Forum and yet the revision appears to have ignored the comments that were made in the forum. The comments in the forum were generally correct yet this set of revisions has ignored those comments. These requirements need to be included in the specification even though the Owner is responsible for having them done. This specification is required to comply with ACI 318. If this testing that is required by 318 is not included then the 301 specification will not comply with the code. The Owner is required to see that the specified testing is conducted by someone in order to comply with the code requirements.	
Lobo	7	2	3	E	Delete "such as Owners testing…" for reason stated for Item 6 ref 6	
Haught	7		4	N	1.6.3.2 - Do not delete the contractor and concrete supplier. Rationale: The contractor and supplier require a reasonable assurance that they will be notified of non-complying material in a timely fashion. The specification should communicate to the contractor that the owner will provide this information.	
Ardahl	7	2	5	N	Do not delete the last part of the paragraph. There is no reason to remove these words since they are true and should be included.	
Wagner (NV)	7	2	5	N	Only the design professional or building official should have the authority to accept or reject the Work. I could not find where the IBC gives special inspectors the right to accept or reject.	
Wilson	7	2	6	E	Recommend not adding "on a timely basis" Leave as: "The testing agency will report test and inspection results that pertain to the Work to Owner and Architect/Engineer after tests and inspections are performed."	
Ardahl	7	2	7	E	Delete the words "the" before Owner, Architect/Engineer, and Contractor.	
Lobo	7	2	7	E	Suggest revising "Owner's testing agency will" to "may" since all items listed below may not be pertinent or required by the owner.	
Lee	7	3	8	N	Check-test is correct at this location; contractor is responsible for performing tests to qualify materials and proportion concrete mixes – the A/E reviews data for acceptance and may require check-tests to verify properties when he deems prudent. Leave check-test in section as originally written.	
Lee	7	3	9	N	Tests performed by A/E or Owner's testing agency are as a check since the contractor is responsible for mixture proportions. Same as item 7 ref. 8	
Lobo	7	3	9	E	Should the owner's agency test the proposed mixture or is it acceptable if the concrete producer submit this info? Why is it suggested that the owners lab do this?	
Engelman	7	2	4&6	E	There needs to be in 301 specifications a mandatory submittal that the	

L. Name	Item	Page	Ref #	N or E	Comment	Subcommittee Response
					contractor, placing contractor and producer be notified of any marginal or failed test result. This protects both the owner, the contractor and the producer from proceeding on the project when problems could occur. This is not covered in present 301 specifications	
Ardahl	7	3	11	N	Add ASTM C138 test method. This method of testing air content is suitable for checking the pressure method especially when the very stable air entraining admixtures are used and are not readily measured with the pressure method. Also the unit weight part of this test is appropriate and should be included.	
Ardahl	7	3	12	E	Change the word “place” to “placed” and delete the word “the” from before Architect/Engineer.	
Carreira	7		12	E	Keep the 100 yd3. There is nothing sacred about the 318 150 yd3.	
Gustafson	7	3	12	Y/R	Not supportive of changing each 100 cubic yards to 150. Early constituted 301 Committee had good reason for the 100.	
Ardahl	7	3	13	N	Keep the original as written with the bulleted items in Items 14, 15, and 16. Delete the last period. Keep the accelerated testing optional requirement. Change to agree with the comments made on the forum.	
Chrzanowski	7		13	E	Delete second period at end.	
Haught	7		13	E	1.6.3.3.e Insert: "The owner's testing agency will conduct.....	
Ardahl	7	4	14	N	Keep the original item as written. This is required by 318 and needs to remain in the 301 specification. ASTM’s cover test methods only not the details of the code requirements.	
Ardahl	7	4	15	N	Keep the original item as written. This is required by 318 and needs to remain in the 301 specification. ASTM’s cover test methods only not the details of the code requirements.	
Ardahl	7	4	16	N	Keep the original item as written. This is required by 318 and needs to remain in the 301 specification. ASTM’s cover test methods only not the details of the code requirements.	
Ardahl	7	4	17	N	Delete this item and keep it in the bulleted location as indicated in Item 16.	
Carino	7	5	17	E	In 4th line, it should be “standard-cured”.	
Ardahl	7	5	20	N	Do not remove ASTM C138. See Item 11.	
Ardahl	7		21	N	Do not delete the specific procedures. They need to remain as the default requirements even if they are to the owners testing agency.	
Lee	7	5	21	N	The reason for revising article 1.6.3.3.g and the proposed revision are confusing. We state in the rationale that the 301 spec is not the place to detail particulars of test requirements; then we state (or require) that the owner’s testing agency will test at more frequent intervals; then in the optional check we tell the A/E to revise the project spec to indicate the increased frequency. I would prefer that the increased frequency be kept in the spec than require the A/E to specify an increased frequency and then give no guidance.	

L. Name	Item	Page	Ref #	N or E	Comment	Subcommittee Response
Lobo	7	5	22	E	Delete “testing” in section title since inspection is also identified below.	
Gustafson	7	6	30	E	Odd word “occasioned”. Ref. 29 uses “because of”. Let’s replace “occasioned” with “because of” in Ref. 30.	
Gustafson	8			Y		
Lobo	8			E	Some reference should be provided to the ACI 214 document on core testing in the notes to the engineer with an ORC.	
Ardahl	8	2	2	E	Remove the word “the” from in front of the words “Contractor”, Owner”, and Owner’s”.	
Lee	8	2	3	N	Nondestructive tests, when correlated to the particular concrete mix, can be used to determine formwork removal as allowed in Section 2. The proposed revision eliminates this use and is possibly too conservative. Revise to original wording. Also, should “nondestructive tests” in title be changed to” in-place test methods” to go along with changes in ref. 10 article 1.6.5.2?	
Prenger	8		3	E	For (3) 1.6.4.2 - I would add the following phrase to the first sentence , "...for evaluating the uniformity of the concrete in place...”	
Carreira	8		5	N	Do not change it. Keep it as it is. This wording is directly from Dick Gaynor.	
Covarrubias	8		5	N	it leaves the option to check or not a concrete whose strength is in doubt. If there are doubts on the strength tested with fresh concrete samples, the check of this strength by cores (or other accepted method) should be compulsory. The paragraph should start saying: "if the strength f the concrete is in doubt or where required by	
Carino	8	2	7	E	Add space after section number.	
Ardahl	8	3	9	N	Delete the word “shall” and replace with “will”. The use of the word shall is not acceptable since the contractor is not the one evaluating the test results. The use of will indicates that the owner is required to and going to evaluate the results.	
Ardahl	8	3	10	N	Delete the word “shall” and replace with “will”. The use of the word shall is not acceptable since the contractor is not the one evaluating the test results. The use of will indicates that the owner is required to and going to evaluate the results.	
Prenger	8		10	E	For (10) 1.6.5.2 - I would look for some guidance on the types of in place tests that are acceptable	
Wagner (NV)	8	3	10	E	Suggest paragraph be titled ‘Nondestructive in-place strength tests’. This paragraph discusses how to evaluate the ‘nondestructive’ tests described in 1.6.4.2 and terminology should be consistent.	
Ardahl	8	3	11	N	Delete the word “shall” and replace with “will”. The use of the word shall is not acceptable since the contractor is not the one evaluating the test results. The use of will indicates that the owner is required to and going to evaluate the	

L. Name	Item	Page	Ref #	N or E	Comment	Subcommittee Response
					results.	
Wagner (NV)	8	3	11	N	Don't agree with wording of last sentence. Core tests are required by ACI 318 when standard molded cylinder breaks come up low.	
Ardahl	8	3	13	E	Remove the word "the" from in front of the words "Contract Documents".	
Haught	8		14	N	1.6.6.2 Undelete Nondestructive. Rationale: Core results are in-place test and they certainly can be used as the basis for acceptance. The deletion changes the intent incorrectly.	
Lobo	8	3	14	E	Should say standard molded and cured … (delete second "standard". Change ref from 1.6.7.1 to 1.6.6.1.	
Ardahl	8	4	15	E	The use of the word "will" is correct.	
Lobo	8	3	15	E	I think "shall" is the correct word since this is a code provision. The owner can have a more conservative requirement for cores.	
Prenger	8		15	E	Ref. 15 - Maybe "are" instead of "will be" or "shall be"?	
Robinson	8		15	E	Maybe "are" instead of "will be" or "shall be"?	
Tarr	8	4	15	E	Is "shall" the correct word to use?	
Gajda (NV)	9				If 1.6.8.3 conflicts with the requirements of mass concrete (section 8), which would "win"?	
Prenger	9			N	Disagree with the reasoning behind slump and temp.	
Gustafson	9	2	2	E	Should "check test" be hyphenated? The term "check test" also appears in Refs. 3 and 4.	
Lee	9	2	2	E	Earlier revisions have been proposed based on rationale that 301 can not dictate to the owner or his testing agency. Here we are telling the owner and the testing agency that they will re-test if the first test is failing. I'm not in disagreement with performing a check-test, but since we are talking to the contractor, shouldn't we just tell him what is unacceptable and will not be placed in the work? Also, why are we assuming that the passing test of 2 performed is the one that is actually representative of the concrete batch? We could still tell the A/E that a check-test should be considered in the optional checklist.	
Lobo	9	2	2	E	C 94 allows for a jobsite addition of air entraining admix. Suggest that this be addressed as an option.	
Ardahl	9	2	3	E	Delete the words "approved by the" and replace with "by".	
Carreira	9		3	N	And Ref 4. Remove "unless approved by the A/E." Reason: The A/E representative at job site if any shall not deside on these subjects	
Lee	9	2	3	N	Approved should not be used in spec. Change "approved" to "accepted" in last sentence.	
Lee	9	2	3	E	Earlier revisions have been proposed based on rationale that 301 can not	

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					dictate to the owner or his testing agency. Here we are telling the owner and the testing agency that they will re-test if the first test is failing. I'm not in disagreement with performing a check-test, but since we are talking to the contractor, shouldn't we just tell him what is unacceptable and will not be placed in the work? Also, why are we assuming that the passing test of 2 performed is the one that is actually representative of the concrete batch? We could still tell the A/E that a check-test should be considered in the optional checklist.	
Tarr	9	1	3	E	Should there be an Option statement in the Checklist similar to that provided to the committee in the Rationale column?	
Wagner (NV)	9	2	3	E	Suggest deleting 'unless approved by the Architect/Engineer'. It seems unnecessary and could confuse field acceptance by implying that it's OK to place concrete out of spec because approval can be obtained later from A/E.	
Ardahl	9	2	4	E	Delete the words "approved by the" and replace with "by".	
Lee	9	2	4	N	Approved should not be used in spec. Change "approved" to "accepted" in last sentence.	
Lee	9	2	4	E	Earlier revisions have been proposed based on rationale that 301 can not dictate to the owner or his testing agency. Here we are telling the owner and the testing agency that they will re-test if the first test is failing. I'm not in disagreement with performing a check-test, but since we are talking to the contractor, shouldn't we just tell him what is unacceptable and will not be placed in the work? Also, why are we assuming that the passing test of 2 performed is the one that is actually representative of the concrete batch? We could still tell the A/E that a check-test should be considered in the optional checklist.	
Lobo	9	2	4	E	Note that it is not necessary to obtain a whole new sample for a temperature test.	
Tarr	9	1	4	E	Should there be an Option statement in the Checklist similar to that provided to the committee in the Rationale column?	
Wagner (NV)	9	2	4	E	Same comment as above.	
Ardahl	10	1		N	The use of the words "will" and "may" in the articles is correct as written. In these articles the requirements are refering to the owner not the contractor. Do **NOT** change them.	
Carreira	10			E	Use "may" in lieu of "will" after all the A/E will accept it or not.	
Covarrubias	10			N	Most of the items are not performance based and all the power is given to the architect/engineer without any formal test to really evaluate what is needed. This type of specification will normally lead to legal litigation.	
Gajda (NV)	10				1.7.5.1.f - The mass concrete committee plans to include language that addresses this.	
Neff	10	2-3	3	E	Also Ref. 5,18,32	

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					Believe that “shall” is better than the proposed “will” in these sections.	
Gustafson	10	2	4	E	Suggest revising to “. . . into compliance is subject to rejection.” Ditto in Refs. 8, 11, 12, and 14 on Page 3.	
Neff	10	2	4	E	Also Ref 8,12,14. I suggest that the phrase “may be rejected” be replaced with something along the lines of “shall be rejected unless approved by the A/E”	
Neff	10	2	5	E	Suggest that the word “will” be deleted before “maintain”	
Hanskat	10	2	10	E	outlines doesn't sound right, suggest "sections". Same in item 11.	
Neff	10	2	10	E	I suggest that this section be rewritten to be more clear. Also, I believe the word “may” makes this requirement extremely vague and subject to dispute in the field.	
Wagner (NV)	10	3	18	E	Suggest changing ‘will be rejected’ to ‘may be rejected’.	
Lee	10	4	32	N	Article 1.7.5.1 lists the conditions which could make a concrete work deficient for durability. Actions that will be taken (such as reject) should not be given in this article. Actions to be taken are provided in Article 1.7.5.2. Revise 1.7.5.1 as follows: “Durability of concrete work will be considered potentially deficient ~~and the concrete work will be rejected~~ when it fails to comply with the requirements that control durability of the structure, …..”	
Ardahl	10	4	37	N	The reference to cold weather is not in agreement with the article 5.3.6.5. The referenced article refers to bothe hot and cold weather conditions and the elimination of hot weather is not acceptable. Change the first sentence by delete the word “cold” and add the word “conditions” immediately after the word “weather”.	
Lee	10	4	37	E	Are there other environmental conditions that could be detrimental and don’t necessarily have to occur in cold weather? What about wind effects that could cause cracking?	
Wagner (NV)	10	4	37	E	Suggest deleting special mention of cold weather since inadequate protection can also occur in hot dry weather. Why not just refer to non-conformance with 5.3.6.5?	
Lee	10	4	40	N	This article does not require an optional checklist item. Actions required when concrete considered potentially deficient in durability depend on the type and severity of deficiency. Actions need to be determined and specified when the event occurs, not at the start of the project for all the possibilities that could occur. Remove the optional checklist item.	
Hanskat	10	4	47	N	Negative - Cold weather alone is not enough. Consider hot weather, high winds, extremely dry conditions. To cover these the original wording is preferable.	