TMS 402/602 COMMITTEE

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MAIN COMMITTEE

TMS 402/602 CHAIR	TMS 402/602 VICE CHAIR	TMS 402/602 2ND VICE CHAIR	TMS 402/602 SECRETARY
JOHN CHRYSLER MASONRY INSTITUTE OF AMERICA 1315 STORM PARKWAY TORRANCE, CA 90501 (310) 257-9000 JC@MASONRY.PRO	DAVID L. PIERSON ARW ENGINEERS 1594 W. PARK CIRCLE OGDEN, UT 84404 (801) 782-6008 DAVEP@ARWENGINEERS.COM	RICHARD M. BENNETT UNIVERSITY OF TENNESSEE 103 ESTABROOK HALL KNOXVILLE, TN 37996 (865) 974-7540 RMBENNETT@UTK.EDU	GERALD A. DALRYMPLE WDP & ASSOCIATES, P.C. 10621 GATEWAY BLVD #200 MANASSAS, VA 20110 (703) 257-9280 MSJC@WDPA.COM

STAFF CONTACT, TMS PHILLIP J. SAMBLANET, (303) 939-9700, EMAIL: PSAMBLANET@MASONRYSOCIETY.ORG

To: John Chrysler – Chair
David Pierson – Vice Chair
Richard Bennett – 2nd Vice Chair

CC: TMS 402/602 Committee
Phil Samblanet, TMS

From: Andy Dalrymple
Secretary

Date: October 4, 2021

Reference: TMS 402/602 Main Committee
2022-19 Main Committee Ballot Summary Report

When this ballot opened, the voting membership of the Main Committee consisted of 46 members, with 43 members returning on-time ballot responses. Table 1 presents the Ballot Summary Report. Tables 2 and 3 provide summaries of individual Committee voting responses and comments received.

TMS rules require affirmative votes from at least one-half of all eligible voters and affirmative votes from two-thirds of the affirmative and negative votes cast. Based on these criteria, the ballot item received sufficient affirmative votes to successfully pass balloting.

All Main Committee voting members are reminded that they are expected to reply to Committee ballots and that the Chair must terminate their voting privileges for failure to return two consecutive ballots per Section 1.8 of the Technical Committee Operations Manual. The following Main Committee voting members did not return a ballot: Mohamed ElGawady, Matthew Jackson and Thomas Corcoran.

Attached are all comments received on the ballot items. The voting Main Committee member comments are arranged by the comments received with “Affirmative with Comment”, “Negative”, and “Abstain” votes appearing before “Comments” from non-voting committee members.

In addition to the regular voting membership of the Committee, comments may have been received from non-voting members. In accordance with TMS balloting procedures, the viewpoints expressed by non-voting members of the Committee are not counted in the final

ballot tally but must be distributed to the Committee for consideration. Therefore, any comments received from non-voting individuals are included within this package.

Comments received with “Affirmative with Comment” and “Abstain with Comment” votes are enclosed for your review and consideration, as deemed appropriate. Comments received with “Negative” votes must be resolved unless they pertain solely to finding a person persuasive, nonpersuasive, or unrelated.

The subcommittee meeting minutes should reflect the actions taken by the subcommittee to resolve comments along with any votes taken and the vote count. The Committee Secretary will document Main Committee resolution of each item listed.

Should you have any questions, please contact me at your convenience.

Table 1. Ballot Summary: 2022 TMS 402/602 Main Committee Ballot 19

Item Number	Pass/Fail	Affirmative	Affirmative With Comment	Negative	Abstain
19-CR-001 #5, 6, 7	Pass	38	4	0	1
19-CR-002 #8	Pass	41	2	0	0
19-CR-003 #31	Pass	37	0	3	3
19-CR-004 #32	Pass	42	0	1	0
19-CR-005 #33	Pass	41	0	1	1
19-CR-006 #58	Pass	43	0	0	0
19-CR-007 #109	Pass	41	1	1	0
19-CR-008 #159	Pass	43	0	0	0
19-CR-009 #182	Pass	41	1	1	0
19-DE-PC03-ety	Pass	43	0	0	0
19-DE-PC09 #9	Pass	43	0	0	0
19-DE-PC10 #10	Pass	43	0	0	0
19-DE-PC11 #11	Pass	43	0	0	0
19-DE-PC35 #35	Pass	43	0	0	0
19-FS-001	Pass	43	0	0	0
19-FS-002 #183	Pass	41	2	0	0
19-FS-003 #204	Pass	43	0	0	0
19-GR 069 #69	Pass	43	0	0	0
19-GR-036 #36	Pass	43	0	0	0
19-GR-074 #74	Pass	43	0	0	0
19-GR-107 #107	Pass	39	2	0	2
19-GR-126 #126	Pass	41	1	1	0
19-GR-132 #132	Pass	43	0	0	0
19-GR-133 #133	Pass	43	0	0	0
19-GR-200 #200	Pass	40	3	0	0
19-GR-202 #202	Pass	43	0	0	0
19-GR-205 #205	Pass	43	0	0	0
19-GR-217 #217	Pass	40	2	1	0
19-PR-001 #30	Pass	38	1	1	3
19-RC-003 PC37	Pass	41	2	0	0
19-RC-004 PC01	Pass	42	1	0	0

Item Number	Pass/Fail	Affirmative	Affirmative With Comment	Negative	Abstain
19-RC-005 PC46 & PC47	Pass	43	0	0	0
19-RC-006 PC48	Pass	43	0	0	0
19-RC-007 PC50-55	Pass	43	0	0	0
19-RC-008 PC62	Pass	43	0	0	0
19-RC-009 PC76 & 77	Pass	43	0	0	0
19-RC-010 PC178	Pass	43	0	0	0
19-RC-011 PC79	Pass	43	0	0	0
19-RC-014 PC80	Pass	43	0	0	0
19-SL-001 #13	Pass	42	0	1	0
19-SL-002 #82 83 84 88 89 122 123 124	Pass	43	0	0	0
19-SL-003 #87	Pass	40	2	1	0
19-SL-004 #90	Pass	42	0	1	0
19-SL-005 #93	Pass	41	1	1	0
19-SL-007 #105	Pass	43	0	0	0
19-SL-008 #110	Pass	43	0	0	0
19-SL-010 #142	Pass	43	0	0	0
19-SL-011 #147	Pass	43	0	0	0
19-SL-012 #118 140	Pass	43	0	0	0
19-SL-013 #120	Pass	40	3	0	0
19-SL-016 #193	Pass	43	0	0	0
19-SL-017 #194	Pass	43	0	0	0
19-SM-PC#18-19	Pass	37	5	1	0
19-VG-038	Pass	43	0	0	0
19-VG-043	Pass	43	0	0	0
19-VG-061	Pass	42	1	0	0
19-VG-064-195	Pass	41	0	1	1
19-VG-068	Pass	41	0	1	1
19-VG-072	Pass	43	0	0	0
19-VG-092	Pass	43	0	0	0
19-VG-099	Pass	42	0	1	0
19-VG-100	Pass	43	0	0	0

Item Number	Pass/Fail	Affirmative	Affirmative With Comment	Negative	Abstain
19-VG-113-215	Pass	41	1	1	0
19-VG-117	Pass	40	0	2	1
19-VG-150	Pass	41	2	0	0
19-VG-151	Pass	41	2	0	0
19-VG-161	Pass	43	0	0	0
19-VG-162	Pass	42	0	0	1
19-VG-164	Pass	43	0	0	0
19-VG-172	Pass	42	0	0	1
19-VG-177	Pass	42	0	0	1
19-VG-192	Pass	42	1	0	0
19-VG-204	Pass	43	0	0	0
19-VG-208	Pass	42	1	0	0
19-VG-209	Pass	41	0	2	0
19-VG-210-212	Pass	41	1	1	0
19-VG-214	Pass	42	0	1	0
19-VG-216	Pass	43	0	0	0

Notes to Table 1:
PASS/FAIL Criteria used per Section 4.2.4 of the Technical Committee Operating Manual:

1. Affirmative votes from at least 50% of all eligible voters (46 Voting members requires 23 Affirmative votes minimum).
2. Affirmative votes from 2/3 of the votes cast, not including abstentions.

Per Section 4.5 of the Technical Committee Operating Manual, names of those abstaining or voting negatively on the ballots must be reported to the Technical Advisory Committee and is being done so by copy of this report as recorded in Table 2, attached.

Table 2. Comment Resolution Table: 2022 TMS 402/602 Main Committee Ballot 19

Item Number	Comment Type	Commenter	Unrelated	Withdrawn	Pers Editorial	Pers Substantive	Non-Persuasive	Action to Resolve Comment Negative	Vote Record
19-CR-001 #5, 6, 7	Abstain	Mr. James A. Farny jfarny@cement.org							
	Affirmative With Comment	Dr. Richard M. Bennett rmbennett@utk.edu							
		Mr. Charles B. Clark Jr. cclark@bia.org							
		Mr. Jason J. Thompson jthompson@ncma.org							
		Mr. John M. Hochwalt johnh@kpff.com							
19-CR-002 #8	Affirmative With Comment	Dr. Khaled Nahlawi khaled.nahlawi@concrete.org							
		Mr. Brian E. Trimble btrimble@imiweb.org							
19-CR-003 #31	Abstain	Dr. William Mark McGinley m.mcginley@louisville.edu							
		Mr. David B. Woodham dwoodham@ana-usa.com							
		Mr. James A. Farny jfarny@cement.org							
	Negative	Dr. Arturo Ernest Schultz arturo.schultz@utsa.edu							
		Mr. Alan Robinson arobinson@trseinc.com							
		Mr. Charles B. Clark Jr. cclark@bia.org							
19-CR-004 #32	Negative	Mr. Darrell W. McMillian misldarrell@masonrystl.org							
19-CR-005 #33	Abstain	Dr. Richard M. Bennett rmbennett@utk.edu							

Item Number	Comment Type	Commenter	Unrelated	Withdrawn	Pers Editorial	Pers Substantive	Non-Persuasive	Action to Resolve Comment Negative	Vote Record
	Negative	Mr. Darrell W. McMillian misldarrell@masonrystl.org							
19-CR-007 #109	Affirmative With Comment	Dr. Arturo Ernest Schultz arturo.schultz@utsa.edu							
	Negative	Mr. Jason J. Thompson jthompson@ncma.org							
19-CR-009 #182	Affirmative With Comment	Dr. Khaled Nahlawi khaled.nahlawi@concrete.org							
	Negative	Mr. Brian E. Trimble btrimble@imiweb.org							
19-FS-002 #183	Affirmative With Comment	Mr. Alan Robinson arobinson@trseinc.com							
		Mr. Jason J. Thompson jthompson@ncma.org							
19-GR-107 #107	Abstain	Dr. Richard M. Bennett rmbennett@utk.edu							
		Mr. John Chrysler jc@masonryinstitute.org							
	Affirmative With Comment	Mr. David L. Pierson davep@arwengineers.com							
		Ms. Heather A. Sustersic hsustersic@colbycoengineering.com							
19-GR-126 #126	Affirmative With Comment	Mr. Scott W. Walkowicz scott@walkowiczce.com							
	Negative	Dr. Richard M. Bennett rmbennett@utk.edu							
19-GR-200 #200	Affirmative With	Mr. Alan Robinson arobinson@trseinc.com							

Item Number	Comment Type	Commenter	Unrelated	Withdrawn	Pers Editorial	Pers Substantive	Non-Persuasive	Action to Resolve Comment Negative	Vote Record
	Comment	Mr. David L. Pierson davep@arwengineers.com							
		Mr. Scott W. Walkowicz scott@walkowiczce.com							
19-GR-217 #217	Affirmative With Comment	Mr. David L. Pierson davep@arwengineers.com							
		Mr. John M. Hochwalt johnh@kpff.com							
	Negative	Mr. Jason J. Thompson jthompson@ncma.org							
19-PR-001 #30	Abstain	Dr. Charles J. Tucker ctucker@fhu.edu							
		Mr. Charles B. Clark Jr. cclark@bia.org							
		Mr. John Chrysler jc@masonryinstitute.org							
	Affirmative With Comment	Mr. David L. Pierson davep@arwengineers.com							
	Negative	Mr. John M. Hochwalt johnh@kpff.com							
19-RC-003 PC37	Affirmative With Comment	Mr. Charles B. Clark Jr. cclark@bia.org							
		Mr. Paul G. Scott pscott@ctsaz.com							
19-RC-004 PC01	Affirmative With Comment	Mr. Alan Robinson arobinson@trseinc.com							
19-SL-001 #13	Negative	Mr. David L. Pierson davep@arwengineers.com							
19-SL-003 #87	Affirmative With	Dr. Richard M. Bennett rmbennett@utk.edu							

Item Number	Comment Type	Commenter	Unrelated	Withdrawn	Pers Editorial	Pers Substantive	Non-Persuasive	Action to Resolve Comment Negative	Vote Record
	Comment	Mr. David L. Pierson davep@arwengineers.com							
	Negative	Mr. Jason J. Thompson jthompson@ncma.org							
19-SL-004 #90	Negative	Mr. David L. Pierson davep@arwengineers.com							
19-SL-005 #93	Affirmative With Comment	Dr. Richard M. Bennett rmbennett@utk.edu							
	Negative	Mr. Scott W. Walkowicz scott@walkowiczce.com							
19-SL-013 #120	Affirmative With Comment	Dr. Richard M. Bennett rmbennett@utk.edu							
		Mr. David L. Pierson davep@arwengineers.com							
		Mr. Jason J. Thompson jthompson@ncma.org							
19-SM-PC#18-19	Affirmative With Comment	Dr. Arturo Ernest Schultz arturo.schultz@utsa.edu							
		Dr. Richard M. Bennett rmbennett@utk.edu							
		Mr. Alan Robinson arobinson@trseinc.com							
		Mr. Paul G. Scott pscott@ctsaz.com							
		Mr. Scott W. Walkowicz scott@walkowiczce.com							
	Negative	Mr. Jason J. Thompson jthompson@ncma.org							
19-VG-061	Affirmative With Comment	Dr. Richard M. Bennett rmbennett@utk.edu							

Item Number	Comment Type	Commenter	Unrelated	Withdrawn	Pers Editorial	Pers Substantive	Non-Persuasive	Action to Resolve Comment Negative	Vote Record
19-VG-064-195	Abstain	Mr. David B. Woodham dwoodham@ana-usa.com							
	Negative	Mr. Keith Itzler kitzler@dewberry.com							
19-VG-068	Abstain	Mr. David T. Biggs biggsconsulting@att.net							
	Negative	Mr. Keith Itzler kitzler@dewberry.com							
19-VG-099	Negative	Mr. Scott W. Walkowicz scott@walkowiczce.com							
19-VG-113-215	Affirmative	Mr. David L. Pierson davep@arwengineers.com							
	Affirmative With Comment	Mr. Alan Robinson arobinson@trseinc.com							
	Negative	Mr. Keith Itzler kitzler@dewberry.com							
19-VG-117	Abstain	Mr. David T. Biggs biggsconsulting@att.net							
	Affirmative	Mr. Keith Itzler kitzler@dewberry.com							
	Negative	Mr. James A. Farny jfarny@cement.org							
		Mr. Jason J. Thompson jthompson@ncma.org							
19-VG-150	Affirmative With Comment	Mr. Alan Robinson arobinson@trseinc.com							
		Mr. Keith Itzler kitzler@dewberry.com							
19-VG-151	Affirmative With Comment	Mr. Alan Robinson arobinson@trseinc.com							
		Mr. Scott W. Walkowicz							

Item Number	Comment Type	Commenter	Unrelated	Withdrawn	Pers Editorial	Pers Substantive	Non-Persuasive	Action to Resolve Comment Negative	Vote Record
		scott@walkowiczce.com							
19-VG-162	Abstain	Mr. David T. Biggs biggsconsulting@att.net							
19-VG-172	Abstain	Mr. David T. Biggs biggsconsulting@att.net							
19-VG-177	Abstain	Mr. David T. Biggs biggsconsulting@att.net							
19-VG-192	Affirmative With Comment	Mr. Scott W. Walkowicz scott@walkowiczce.com							
19-VG-208	Affirmative With Comment	Ms. Heather A. Sustersic hsustersic@colbycoengineering.com							
19-VG-209	Negative	Mr. David T. Biggs biggsconsulting@att.net							
		Ms. Heather A. Sustersic hsustersic@colbycoengineering.com							
19-VG-210-212	Affirmative With Comment	Mr. David L. Pierson davep@arwengineers.com							
	Negative	Mr. David T. Biggs biggsconsulting@att.net							
19-VG-214	Negative	Mr. David T. Biggs biggsconsulting@att.net							

Table 3. 2022 TMS 402/602 Main Committee Ballot 19 – Comments

Item Number	Comment Type	Commenter	Comment	Comment File
19-CR-001 #5, 6, 7	Affirmative With Comment	Dr. Richard M. Bennett rmbennett@utk.edu	Standards only need to be listed in TMS 402 1.4 if they are cited in the code. Since C1714 is not cited in the Code, it should not be included in 1.4, just like C270 is not included in TMS 402. Just include in TMS 602.	
		Mr. Charles B. Clark Jr. cclark@bia.org	Agree with Subcommittee voter that commentary about ASTM C1714 should be added.	
		Mr. Jason J. Thompson jthompson@ncma.org	No need to add C1714 to TMS 402 if it isn't referenced in that standard. No concerns with adding C1714 to TMS 602.	
		Mr. John M. Hochwalt johnh@kpff.com	I agree with the subcommittee comment. The proposed commentary would be very helpful to users.	
	Comment Non-Voting	Ms. Cortney Fried cfried@bia.org	Agree with the subcommittee member suggestion to add commentary text about the relationship between C270 and C1714	
19-CR-002 #8	Affirmative With Comment	Dr. Khaled Nahlawi khaled.nahlawi@concrete.org	Agree with the subcommittees changes; delete plastic and 2) To read: Mortar "A mixture of cementitious materials, fine aggregates, and water, with or without admixtures, that is used to construct unit masonry assemblies."	
		Mr. Brian E. Trimble btrimble@imiweb.org	I actually agree with the Subcommittee Comment. There is no need to differentiate between plastic and hardened properties and it	

Item Number	Comment Type	Commenter	Comment	Comment File
			helps to have consistent definitions between ASTM and TMS.	
19-CR-003 #31	Comment Non-Voting	Ms. Cortney Fried cfried@bia.org	Consider surveying masonry contractors to determine how they implement this provision--it may provide better insight about how to modify it.	
	Negative	Dr. Arturo Ernest Schultz arturo.schultz@utsa.edu	Background information justifying the proposed change in temperature change is needed, as noted by the abstaining Subcommittee voter.	
		Mr. Alan Robinson arobinson@trseinc.com	I agree with the abstain comment at the committee level. There does not appear to be any basis for the change. This portion of the specification appears to have been first put into the TMS in the 2002 version. I think additional checking should be made to detarime its orrigin prior to making this change.	
		Mr. Charles B. Clark Jr. cclark@bia.org	Agree with Subcommittee comment. The range of temperature allowed for the for mixing of the grout seems adequate to achieve the temperature needed at the time of grout placement. What is intended by "at the time of grout placement" is unclear as it could be interpreted to be the temperature of the grout as it is poured or it could be interpreted to be the temperature of the grout just after pouring (when it looses heat to the masonry). I am not clear on how whether there is a direct correlation of the concrete placement temperature to the grout placement temperature in masonry. I think more research needs to be done to determine the basis of the requirement before a change is imposed.	

Item Number	Comment Type	Commenter	Comment	Comment File
19-CR-004 #32	Negative	Mr. Darrell W. McMillian misldarrell@masonrystl.org	I disagree with the Response/Rationale to this public comment. The overall point of the public comment is not how clean a given contractor can keep a vertical cell column, but whether an inspector can still visually inspect a vertical cell column at a height slightly greater than 5'-4". The Response/Rationale does not address this. I would like to see the subcommittee consider that possibility further.	
19-CR-005 #33	Negative	Mr. Darrell W. McMillian misldarrell@masonrystl.org	I disagree with the proposed subcommittee action to this public comment. I would prefer the subcommittee consider a new ballot, based on the current proposed Response/Rationale statement to PC 33, that would bring clarity to the exact role of the special inspector regarding the sample panel process. For instance, does the structural special inspector's role also include the project's aesthetic requirements as Art. 1.6 D commentary seems to imply?	
19-CR-007 #109	Affirmative With Comment	Dr. Arturo Ernest Schultz arturo.schultz@utsa.edu	How much loss of plasticity?	
	Negative	Mr. Jason J. Thompson jthompson@ncma.org	Plasticity is a quality that can range from “low” to “high” as opposed to a singular quantity. Grout begins to lose its plasticity the moment it is placed. This may lead some to interpret from the proposed language that grout cannot be reconsolidated under any circumstances.	
19-CR-009 #182	Affirmative With Comment	Dr. Khaled Nahlawi khaled.nahlawi@concrete.org	Suggest minor modification to the proposal; use "placement" instead of the word "pour."	

Item Number	Comment Type	Commenter	Comment	Comment File
			Grout placement rather than grout pour to be consistent with concrete terminology.	
	Negative	Mr. Brian E. Trimble btrimble@imiweb.org	Unfortunately, I did not have the foresight to ask to be a part of the subcommittee deliberations for this item as I had developed possible language to conform to the Public Comment. I believe that the terms "grout pour" and "grout lift" have been confused for years. I base this on the many seminars I give to engineers and the length of time it takes to explain the differences between the two terms. How many hours and possible figures have we discussed to help alleviate this issue. I feel that there are possible changes that could be made to avoid the use of the term grout pour. Although "grout pour" is a succinct term, there are really only two places where the longer phrase may be necessary. Consider the attached changes.	19-CR-009_Trimble_negative_-_Grout_pour_language.docx See attached.
19-FS-002 #183	Affirmative With Comment	Mr. Alan Robinson arobinson@trseinc.com	We should probably match the current IBC, which uses "Registered Design Professional" and "registered Design Professional In Responsible Charge". I am also not sure the term Architect/Engineer is more inclusive as many jurisdictions limit who can use those titles to the registered professionals. I do not know what other simple term could be used, but it might be something to work with on in the next cycle.	
		Mr. Jason J. Thompson jthompson@ncma.org	New business for another day, but Iâ€™d be in favor of sterilizing for all user-specific references.	
19-GR-107 #107	Affirmative With Comment	Mr. David L. Pierson davep@arwengineers.com	The IBC does require that the design loads used by the engineer be shown on the construction documents (IBC 1603.1)	

Item Number	Comment Type	Commenter	Comment	Comment File
		Ms. Heather A. Sustersic hsustersic@colbycoengineering.com	Agreed. Loads are also required to be shown on the construction documents per IBC Section 1603.1.	
19-GR-126 #126	Affirmative With Comment	Mr. Scott W. Walkowicz scott@walkowiczce.com	It seems that the Commentary should note that the units should be within the permitted tolerances for performance to be consistent with the code based designs, not just 'usually' within....	
	Negative	Dr. Richard M. Bennett rmbennett@utk.edu	My search of TMS 402 did not find any use of "actual dimension" so it does not need to be defined. A definition may also create some unintended consequences of places were "actual" is used. In most places, "actual" should be changed, which would be good new business next cycle if we remember. In allof the ones below, I am channeling Rochelle, who often reminded us we do not know the actual dimension. Commentary 8.2.4.1 Therefore, in Equation 8-14, the value of the eccentricity "e" that is to be used to calculate P_e is the ~~actual~~ eccentricity of the applied compressive load. The value of "e" is not to be calculated as M_{max} divided by P where M_{max} is a moment caused by other than eccentric load. Commentary 8.3.4.3 In the event that actual eccentricity exceeds the minimum eccentricity required by this Code, the actual eccentricity should be used. Code **10.5.1.5** The distance d shall be calculated as the ~~actual~~ specified distance from the centerline of the tendon to the compression face of the member. Code 2.1 d_v = ~~actual~~ specified depth of a member	19-GR-126-rmbennett-negative.doc Reproduced here

Item Number	Comment Type	Commenter	Comment	Comment File
			in direction of shear considered, in. (mm) **5.1.1.1.3** The width of flange considered effective on each side of the web shall be the smaller of the ~~actual~~ specified flange on either side of the web wall and the value shown in Table 5.1.1.1.3,	
19-GR-200 #200	Affirmative With Comment	Mr. Alan Robinson arobinson@trseinc.com	It would probably be better to use "used in the design" rather than "assumed in the design" as one could assume locations of elements that would not change the results, but if the elements were used in the design, you would know if it changed the results or not.	
		Mr. David L. Pierson davep@arwengineers.com	I think I am okay with the response, but I certainly wish the ballot item indicated the section of 402/602 that was being considered. I don't know where to look in the code to see the context of the provision.	
		Mr. Scott W. Walkowicz scott@walkowiczce.com	I'm okay with leaving things as-is, for now, but it seems that 'utilized as the basis for design' would be better than assumed and consistent with the commenter's intent...	
19-GR-217 #217	Affirmative With Comment	Mr. David L. Pierson davep@arwengineers.com	I think I am okay with this, but since the ballot item does not identify where this occurs in the code, I cannot find it to review it in context.	
		Mr. John M. Hochwalt johnh@kpff.com	My understanding is that this applied to Code Section 1.2.1.	
	Negative	Mr. Jason J. Thompson jthompson@ncma.org	The language proposed is commentary that cites examples. I'm fine with adding a similar discussion to the commentary, but not as code language.	

Item Number	Comment Type	Commenter	Comment	Comment File
19-PR-001 #30	Affirmative With Comment	Mr. David L. Pierson davep@arwengineers.com	The public comment that is being addressed is not included in the ballot item. So I am not sure what the ballot item is addressing. I didn't vote negative because I don't see anything in the ballot item that is of concern. But we are only allowed to address public comments on this ballot, so including the public comment in the ballot item is important.	
	Negative	Mr. John M. Hochwalt johnh@kpff.com	See attached comment form.	19-RC-001_Hochwalt.pdf
19-RC-003 PC37	Affirmative With Comment	Mr. Charles B. Clark Jr. cclark@bia.org	The exception could be written more clearly to indicate that it is an exception to requirements within ASTM A951.	
		Mr. Paul G. Scott pscott@ctsaz.com	Is the intent to say maximum of 90 ksi instead of minimum of 90 ksi?	
	Comment Non-Voting	Ms. Cortney Fried cfried@bia.org	While I agree with the content of the change, the placement of the exception could be interpreted to negate other requirements in the paragraph when using stainless steel joint reinforcing. Consider reorganizing this paragraph so that the exception is associated only with the material change. Suggested text: 2.4 D. Joint reinforcement - Provide joint reinforcement in accordance with the following: 1. ~~that~~ Conforms to ASTM A951 or shall be fabricated with AISI Type 304 or Type 316 stainless steel wire conforming to ASTM A580/A580M ~~and~~ having a minimum yield	

Item Number	Comment Type	Commenter	Comment	Comment File
			strength of 45 ksi (310 MPa) and a minimum ultimate tensile strength of 90 ksi (620 MPa) 2. ~~with~~ Maximum wire size shall not exceed one-half the specified mortar joint thickness. Do not use joint reinforcement with stacked wires whose total thickness exceeds one-half the specified mortar joint thickness. 3. Maximum spacing of cross wires in ladder-type joint reinforcement and of points of connection of cross wires to longitudinal wires of truss-type joint reinforcement shall be 16 in. (400 mm). ~~Exception: Joint reinforcement may be .~~	
19-RC-004 PC01	Affirmative With Comment	Mr. Alan Robinson arobinson@trseinc.com	The proposed language is still awkward. Maybe it would be better to use "masonry reinforced with glass fiber reinforced polymer (GFRP)" However, that adds more words which is not preferred. Maybe use that language only when the full name is spelled out and if it is just GFRP, it can be "GFRP reinforced masonry".	
19-SL-001 #13	Negative	Mr. David L. Pierson davep@arwengineers.com	This provision is one of those places where TMS 402 seems to stick it's hands into something that ASCE 7 and the IBC actually govern. I realize that other countries that do not use the IBC use TMS 402/602, but the usage of "R" in our provisions automatically ties us to ASCE 7/ IBC in this provision. Not all other building codes use "R" in the same equations that IBC/ASCE 7 uses. So the waters get muddy....	

Item Number	Comment Type	Commenter	Comment	Comment File
			If columns cannot be part of the seismic resisting system (as you indicated, IBC prohibits this), then they cannot resist lateral loads other than those generated by their own weight. Therefore, they cannot contribute to the stiffness of the building. Therefore, if we are tied to the IBC/ASCE 7, 100% of all strength and stiffness provided by masonry must be provided by walls. ASCE 7 actually allows me to share load between masonry walls and steel frames along the same line of resistance, provided I meet certain criteria and base the distribution on relative rigidities. So, realistically, IBC and ASCE 7 does allow steel braced frames to provide more than 20% of the stiffness along a line of lateral resistance, which would technically be prohibited by this provision. And the waters get muddier.... I suggest that this entire section 7.4.3.2.4 be deleted. I think there are many times that engineers - particularly in areas of low seismicity - are combining steel braced frames with masonry walls along the same line and are not complying with this, nor should they be required to. We already require that loads be distributed to elements based on rigidities (4.1.6). Usage of columns to resist lateral loads would fall under section 1.3.	
19-SL-003 #87	Affirmative With Comment	Dr. Richard M. Bennett rmbennett@utk.edu	A similar change of wording should be made in Section 7.4.4.1.	
		Mr. David L. Pierson davep@arwengineers.com	This comment is simply asking that the provision be considered further after this. What about	

Item Number	Comment Type	Commenter	Comment	Comment File
			walls that are supported on all edges - which direction do they span? In our office, we just put reinforcing in both directions. The amount of reinforcing we are talking about here is minimal. Maybe we should require it in both directions, always. A large amount of non-participating walls will be supported on at least 3 sides - which results in a kind of diagonal span.	
	Negative	Mr. Jason J. Thompson jthompson@ncma.org	This comment comes up every cycle or two. The purpose of this prescriptive seismic reinforcement for nonparticipating elements is not to add an undefined increase in strength to the element - nor is it to increase the ductility of these isolated elements. The initial design checks determine whether nonparticipating elements can be designed as reinforced or unreinforced - and if the latter, then these prescriptive reinforcement minimums kick in. Yet, many argue these provisions are already unnecessary - analogous to verifying that everything checks for an ordinary plain shear wall...but still requiring it to be reinforced for extra precaution. Might be an individual designer's take, but shouldn't be a code minimum.	
19-SL-004 #90	Negative	Mr. David L. Pierson davep@arwengineers.com	In my humble opinion, the provision as now written is clearer. I understand where we are trying to go here, but "in-plane shear reinforcement" does not seem as clear to me. Probably because "in-plane" is acting as an adjective and it could be interpreted to apply to either "shear" or to "reinforcement". I don't think we have "Out-of-plane" shear	

Item Number	Comment Type	Commenter	Comment	Comment File
			reinforcement, so one could argue that the descriptor "In-plane" is not really required. Also, vertical steel in shear walls does resist what we call shear forces (more correctly they are diagonal tension, I think) and could technically be considered "shear reinforcement". That's one reason I would like to keep "horizontal" in these provisions. Also, what about a wall that is supported on piles every 30 ft? That wall will have in-plane shear forces applied in the vertical direction, so what is the "in-plane shear reinforcement" in that case?	
19-SL-005 #93	Affirmative With Comment	Dr. Richard M. Bennett rmbennett@utk.edu	By using the phrase "In previous editions of the Code," a change will need to be made in the 2028 Commentary. It is easy to forget to do that. I would suggest editorially changing to" Prior to the 2022 edition of this Code".	
	Negative	Mr. Scott W. Walkowicz scott@walkowiczce.com	I think if the intent for the minimum reinforcement areas/ratios is for shear capacity for seismic performance, that the content should be in the seismic chapter rather than as duplicate provisions in the ASD and SD chapters. If all three of the current provisions are there for seismic performance, then it seems that it would be better to delete the provisions from the design chapters and consilidate them in Chapter 7 as would be consistent with the intent of harmonization process. This seems reasonable and achievable for this content if it is seismic only. If the reinforcement requirements are general in	

Item Number	Comment Type	Commenter	Comment	Comment File
			nature and for shear walls with load from other than seismic, then it makes sense to delete the requirement from Chapter 7, but it still seems better to move it somewhere else, like Chapter 5 for shear walls, rather than having duplicate content in two chapters. This would be more messy since there isn't really a 'walls' subsection in Chapter 5, so I'll withdraw my negative and leave this for the next committee if this provision relates to other than seismic loads....	
19-SL-013 #120	Affirmative With Comment	Dr. Richard M. Bennett rmbennett@utk.edu	Like with a lot of things, we are not consistent with "lateral force resisting system" in TMS 402. There are 7 cases of "lateral force resisting system", 5 cases of "lateral-force-resisting system" and 3 cases of "lateral-force resisting system." I think the correct is "lateral-force-resisting system." Form and Style has converged to using an uppercase Code, so it should read "this Code." Specifically, the end of the first sentence of the Exception should be editorially changed from "this code" to "this Code." "of this code" is not needed after Section 4.1.6; if nothing else is given then it is a section of TMS 402. In the commentary change "in accordance with the code" to "in accordance with this Code."	
		Mr. David L. Pierson davep@arwengineers.com	Here's what I don't understand. How could you have a non-participating element that is so stiff that it significantly alters the load distribution, and still call it a non-participating element? If it's that stiff, it is part of the lateral load resisting	

Item Number	Comment Type	Commenter	Comment	Comment File
			system. It's like saying Kevin Durant is a non-participating part of the Nets, but the Celtics still need to consider how much he might impact the game - because he gets to be on the court in addition to the other 5 Nets players. He's just been defined as a non-participator, so he doesn't count as a player, but he still gets to participate and contribute. The whole idea is that non-participating elements have very low relative stiffness (compared to the participating elements), and therefore do not attract any significant force, and can move the minor displacements required without damage.	
		Mr. Jason J. Thompson jthompson@ncma.org	Nit-picky item if you want it...add a comma between non-islated and nonparticipating. The influence of any non-isolated, nonparticipating elements…	
19-SM-PC#18-19	Affirmative With Comment	Dr. Arturo Ernest Schultz arturo.schultz@utsa.edu	The part of the response that states, in reference to span length, that "this is not something engineers struggle to define" is somewhat irrelevant here. I think that this issue merits a little more here. How "accurate" is any definition for span length, and how can the "accuracy" be assessed? A suggestion is that definition of span length that best correlates with masonry beam tests in terms or important performance limit states such as first cracking, maximum shear and moment capacities, and deflections. That, I believe, is the real issue. If you are sure that the	

Item Number	Comment Type	Commenter	Comment	Comment File
			proposed defintion acheives one or more of those goals, then state it and cite the evidence.	
		Dr. Richard M. Bennett rmbennett@utk.edu	The first phrase "For design of beams other than those designed as deep beams per section 5.2.2," is not needed. Design is either by 5.2.1 or 5.2.2, and 5.2.2 does not include 5.2.1.1 (it includes other sections of 5.2.1, but not this one). Thus, the beginning phrase is not needed.	
		Mr. Alan Robinson arobinson@trseinc.com	It might be better to indicate that this is the minimum span length. I could see a scenario where you have a 24 inch pier and taking the span to the center of the pier for calcualtion of the negative moment over the pier would be more conservative. This could probably be engineering judgement, so the proposed language is fine.	
		Mr. Paul G. Scott pscott@ctsaz.com	Thanks for continuing to work on this. I think this solution will work for the design engineers.	
		Mr. Scott W. Walkowicz scott@walkowiczce.com	Well done - thank you! Please consider if it would be better to use 'design bearing length' rather than 'required'... since designers may use longer than the minimum required bearing length. Also, with this change, if beams are detailed as continuous over supports, possibly with top steel, would their be a concern with differences in actual behavior compared to design behavior? Should some commentary be added to aid designers to know when to go beyond the code minimums?	
	Negative	Mr. Jason J. Thompson jthompson@ncma.org	Sorry...I know this has been an uphill topic to tackle...but a few things with this one...	

Item Number	Comment Type	Commenter	Comment	Comment File
			The charging language of 5.2 already exempts the provisions of 5.2.1 from applying to deep beams. It doesn't need to be repeated here and instead could just say: "Span length shall be the distance from face-to-face of supports, plus ½ of the required bearing length at each end." And omit the first part of the proposed language. In general, I buy this for simply-supported beams, not sure what to do for cantilevered beams, which has no face-to-face dimension. For continuous beams, say the support is provided by a 2 ft pier and the required bearing length is 2 in. If the clear opening is relatively small, that could lead to an unconservative assumption on span length. Which also raises the question of what "required" bearing length is… does Section 5.2.1.4 override small "required" lengths? I'm in the camp of letting engineers be engineers and simply stipulating that "The span length shall be determined based upon the principles of engineering mechanics considering support conditions."	
19-VG-061	Affirmative With Comment	Dr. Richard M. Bennett rmbennett@utk.edu	The response "Changes are made consistent with public comment by providing requirements that apply to box and triangular unit ties." doesn't make sense for this	

Item Number	Comment Type	Commenter	Comment	Comment File
			public comment, but since changes are being made it may not matter.	
19-VG-064-195	Negative	Mr. Keith Itzler kitzler@dewberry.com	Not in favor of removing the minimum spacing requirement in this prescriptive Chapter. If the issue is the phrase "unless otherwise required", suggest start the phrase with "At a minimum," or unless otherwise determined by analysis considering specified loading requirements,...."	
19-VG-068	Negative	Mr. Keith Itzler kitzler@dewberry.com	If you are going to introduce the term "light" into the Code I beleive it needs to be defined. Not concerned with "light" as terminology in the commentary as it is not mandatory language.	
19-VG-099	Negative	Mr. Scott W. Walkowicz scott@walkowiczce.com	I agree with the change as it applies to WLF-Corrugated Sheet Metal (CSM) since that portion of the the table directly requires sheathing to comply with 13.2.2.3.3, but none of the other table sections with Footnote 1 require compliance with that section. This change would reduce the allowed cavity thickness 5/8" for LFW-SM and Adjustable ties, and CFLSF systems. Either add the sheathing requirement to those sections and keep the footnote deletion (not my preference since this would likely eliminate the usability of ties with prongs) or just delete the footnote 1 reference from WLF-CSM section and leave the rest of the table and the footnote as-is... my recommendation.	
19-VG-113-215	Affirmative	Mr. David L. Pierson davep@arwengineers.com	I can't get this to close without writing something here. Affirmative is my vote.	
	Affirmative With Comment	Mr. Alan Robinson arobinson@trseinc.com	I think the first sentence under 13.2.2.3.3.(a) "the bearing stress..." should be underlined as I thnk it is new.	

Item Number	Comment Type	Commenter	Comment	Comment File
	Negative	Mr. Keith Itzler kitzler@dewberry.com	Do not beleive we should allow counting on materials that are less robust than associated with OSB, plywood or high density gypsum with allowable compressive strength less than 100psi in a prescriptive chapter. Suggest the wording be left as is. Designs using other materials should be engineered.	
19-VG-117	Negative	Mr. Jason J. Thompson jthompson@ncma.org	Just a stake in the ground to point to if by the end of the next 402/602 cycle ASTM hasn't made any meaningful headway on a new standard.	
19-VG-150	Affirmative With Comment	Mr. Alan Robinson arobinson@trseinc.com	The entry under Modulus of Rigidity shoudl als indicate it "shall be determined by tests or provided by manufacturer."	
		Mr. Keith Itzler kitzler@dewberry.com	Is the same note appropriate for the Modulus of Rigidity column?	
19-VG-151	Affirmative With Comment	Mr. Alan Robinson arobinson@trseinc.com	The term "total length of the wire within the veneer" should be better defined. Is this just the wires parallel to the length of the veneer wall or is it measured from where the wire tie passes the inside face of the veneer. It should probably be the first as that would be similar to the "Z" ties where the 2" is only the end after the bend. If the cavity width is modified slightly, the tie might not be acceptable if it is measured from the inside face of the veneer.	
		Mr. Scott W. Walkowicz scott@walkowiczce.com	Good, but consider changing Item 2 to say perpendicular to the tie direction of load, or parallel to the veneer wythe plane. As currently worded, the entire length of wire embedded in the veneer could be counted, including the wire lengths parallel to the load, which seems	

Item Number	Comment Type	Commenter	Comment	Comment File
			inappropriate and not in keeping with the intent of the rationale.	
19-VG-192	Affirmative With Comment	Mr. Scott W. Walkowicz scott@walkowiczce.com	Consider adding commentary to address what influence these factors could have on the tributary area method - some could be beneficial and others detrimental as the system stiffness changes.	
19-VG-208	Affirmative With Comment	Ms. Heather A. Sustersic hsustersic@colbycoengineering.com	I agree with both the commenter and the rationale, but think there is a third way to address both. Consider adding the phrase "properly designed and specified" where indicated below: "Failures of properly designed and specified anchored and adhered veneer are often due to nonconformance with the contract documents. ..." With the publication of the new veneer chapter, I expect it to take some time for designers to fully come up to speed on the new provisions, opening the door for a higher prevalence of errors/omissions on the contract documents.	
19-VG-209	Negative	Mr. David T. Biggs biggsconsulting@att.net	I agree with the public commenter and believe the change should be made without waiting for the next cycle.	
		Ms. Heather A. Sustersic hsustersic@colbycoengineering.com	I agree with the subcommittee comment to include the phrase "but not limited to" to improve the introduction. The commentary sounds authoritative as written which could imply the list is exhaustive. Why take this up as new business when it can be resolved this cycle in response to the public comment?	

Item Number	Comment Type	Commenter	Comment	Comment File
19-VG-210-212	Affirmative With Comment	Mr. David L. Pierson davep@arwengineers.com	Technically, I think it was better to keep "into the building", and then add the words "beyond the drainage space". That defined the direction of the water movement. But it's probably a given that we are concerned about water getting into the building. Still, as written now, I guess if your water heater leaks and you get water build up inside of the building, you must design the wall to keep that water from getting out "beyond the drainage space".	
	Negative	Mr. David T. Biggs biggsconsulting@att.net	The drainage space does not include the insulation as shown on Figure CC-13.3.2. So to design, detail and construct the wall system to prevent water from penetrating beyond the drainage space means the insulation must become a water-resistive barrier. Normally, any barrier is placed under the insulation. TMS 602 also does not specify any insualtion so the water-resistive characteristics are not mandated. I suggest changing the wording to "beyond the drainage space and insulation". Using "cavity" is not an option because unless Footnote 1 of Figure CC-13.2.4 is met, the water could go through the sheathing and be acceptable. For new business next cycle, consider adding a water-resistive barrier to Fig CC-13-2.4 and	

Item Number	Comment Type	Commenter	Comment	Comment File
			change the wording to "beyond the water-resistive barrier".	
19-VG-214	Negative	Mr. David T. Biggs biggsconsulting@att.net	I agree with the commenter.	

19-CR-009 Trimble negative

Grout pour should be renamed to **grout placement** and/or removed.

Grout is the material (n)

Grouting is the process (v); you place grout into the wall

Placement (n) – the act of putting (placing) grout into masonry

****

Proposed changes:

3.5 — Grout placement

3.5 A. *Placing time* — Place grout within 1 ½ hr from introducing water in the mixture and prior to initial set.

1. Discard site-mixed grout that does not meet the specified slump without adding water after initial mixing.
2. For ready-mixed grout:
   a. Addition of water is permitted at the time of discharge to adjust slump.
   b. Discard ready-mixed grout that does not meet the specified slump without adding water, other than the water that was added at the time of discharge.
   The time limitation is waived as long as the ready-mixed grout meets the specified slump.

3.5 B. *Confinement* — Confine grout to the areas indicated on the Project Drawings. Use material to confine grout that permits bond between masonry units and mortar.

3.5 C. ~~*Grout pour h*~~*H**eight** of masonry prior to grouting* — Do not exceed the ~~maximum~~ grout ~~pour~~ placement limits~~height~~ given in Table 7.

3.5 D. *Grout lift height limits*

1. For grout conforming to Article 2.2 A:
   a. Where the following conditions are met, place grout in lifts not exceeding 12 ft 8 in. (3.86 m).
      i. The masonry has cured for at least 4 hours.
      ii. The grout slump is maintained between 10 and 11 in. (254 and 279 mm).
      iii. No intermediate reinforced bond beams are ~~placed~~ located between the top and the bottom of the area to be grouted~~pour height~~.
   b. When the conditions of Articles 3.5 D.1.a.i and 3.5 D.1.a.ii are met but there are intermediate bond beams within the area to be grouted ~~pour~~, limit the grout lift height to the bottom of the lowest bond beam that is more than 5 ft 4 in. (1.63 m) above the bottom of the lift, but do not exceed a grout lift height of 12 ft 8 in. (3.86 m).
   c. When the conditions of Article 3.5 D.1.a.i or Article 3.5 D.1.a.ii are not met, place grout in lifts not exceeding 5 ft 4 in. (1.63 m).
2. For self-consolidating grout conforming to Article 2.2:
   a. When placed in masonry that has cured for at least 4 hours, place in lifts not exceeding the grouting height limits of Table 7 ~~pour height~~.

b. When placed in masonry that has not cured for at least 4 hours, place in lifts not exceeding 5 ft 4 in. (1.63 m) or the grouting ~~pour~~ height limit, whichever is less.

3.5 E. *Consolidation*

1. Consolidate grout at the time of placement.
   a. Consolidate grout ~~pours~~ 12 in. (305 mm) or less in height by mechanical vibration or by puddling.
   b. Consolidate grout placed in lifts~~pours~~ exceeding 12 in. (305 mm) in height by mechanical vibration, and reconsolidate by mechanical vibration after initial water loss and settlement has occurred.
2. Consolidation or reconsolidation is not required for self-consolidating grout.

3.5 F. *Grout key* — When grouting, form ~~grout keys between grout pours. Form~~ grout keys between grout lifts when the first lift is permitted to set prior to placement of the subsequent lift

1. Form a grout key by terminating the grout a minimum of 1½ in. (38.1 mm) below a mortar joint.
2. Do not form grout keys within beams.
3. At beams or lintels laid with closed bottom units, terminate the grout placement ~~pour~~ at the bottom of the beam or lintel without forming a grout key.

3.5 G. *Alternate grout placement* — Place masonry units and grout using construction procedures employed in the accepted grout demonstration panel.

3.5 H. *Grouting AAC masonry* — Wet AAC masonry thoroughly before grouting to ensure that the grout flows to completely fill the space to be grouted.

Commentary

3.5 — *Grout placement*

Grout may be placed by pumping or pouring from large or small buckets. The amount of grout to be placed and the contractor's experience influence the choice of placement method.

The requirements of this Article do not apply to prestressing grout.

3.5 A. *Placing time* — Grout placement is often limited to 1½ hours after initial mixing, but this time period may be too long in hot weather (initial set may occur) and may be unduly restrictive in cooler weather. One indicator that the grout has not reached initial set is a stable and reasonable grout temperature. However, sophisticated equipment and experienced personnel are required to determine initial set with absolute certainty.

Article 3.5 A.2 permits water to be added to ready-mixed grout to compensate for evaporation that has occurred prior to discharge from the mixer. Replacement of evaporated water is not detrimental to ready-mixed grout; ~~.~~ h~~H~~owever, water may not be added to ready-mixed grout after discharge.

3.5 B. *Confinement* — Certain locations in the wall may not be grouted in order to reduce dead loads or allow placement of other materials such as insulation or wiring. Cross webs adjacent to cells to be grouted can be bedded with mortar to confine the grout. Metal lath, plastic screening, or other items can be used to plug cells below bond beams.

3.5 C. *Grouting ~~pour~~ height limits* — Table 7 in the Specification has been developed as a guide for grouting procedures. The designer can impose more stringent requirements if so desired. The recommended maximum height of masonry built prior to placement of grout ~~pour (see Figure SC-20)~~ corresponds with the least clear dimension of the grout space (see Figure SC-20). The minimum width of grout space is used when the grout is placed in collar joints. The minimum cell dimensions are used when grouting cells of hollow masonry units, including consideration of vertical alignment of cells. As the height of the ~~pour~~ masonry to be grouted increases, the minimum grout space increases. The grout space dimensions are smallest clear dimensions, considering projections or obstructions into the grout space and the diameter of horizontal reinforcement, as illustrated in Figure SC-21. The grout space requirements of Table 7 are based on coarse and fine grouts as defined by ASTM C476, which defines aggregate size, and cleaning practices to permit the complete filling of grout spaces and adequate consolidation using typical methods of construction.

Grout placement~~pour~~ heights and minimum dimensions that meet the requirements of Table 7 do not automatically mean that the grout space will be filled.

Grout spaces smaller than specified in Table 7 have been used successfully in some areas. When the contractor asks for acceptance of a grouting procedure that does not meet the limits in Table 7, construction of a grout demonstration panel is required. Destructive or non-destructive evaluation can confirm that filling and adequate consolidation have been achieved. The Architect/Engineer should establish criteria for the grout demonstration panel to assure that critical masonry components included in the construction will be represented in the demonstration panel. Because a single grout demonstration panel erected prior to masonry construction cannot account for all conditions that may be encountered during construction, the Architect/Engineer should establish inspection procedures to verify grout placement during construction. These inspection procedures should include destructive or non-destructive evaluation to confirm that filling and adequate consolidation have been achieved.

3.5 D. *Grout lift height limits* — A lift is the height to which grout is placed into masonry in one continuous operation (see Figure SC-20). After placement of a grout lift, water is absorbed by the masonry units. Following this water loss, a subsequent lift may be placed on top of the still plastic grout.

Grouted construction develops fluid pressure in the grout space. Grout ~~pours~~ placement composed of several lifts may develop this fluid pressure for the full ~~pour~~ grout height. The faces of hollow units with unbraced ends can break out. Wythes may separate. The wire ties between wythes may not be sufficient to prevent this from occurring. Higher lifts may be used with self-consolidating grout because its fluidity and its lower initial water-cement ratio result in reduced potential for fluid pressure problems.

The 4-hour time period is stipulated for grout lifts over 5 ft 4 in. (1.63 m) to provide sufficient curing time to minimize potential displacement of units during the consolidation and reconsolidation process. The 4 hours is based on typical curing conditions and may be increased based on local climatic conditions at the time of construction. For example, during cold weather construction, consider increasing the 4-hour curing period. When a wall is to be grouted with self-consolidating grout, the grout lift height is not restricted by intermediate, reinforced bond beam locations because self-consolidating grout easily flows around reinforcement (NCMA (2006); NCMA (2007)).

3.5 E. *Consolidation* — Except for self-consolidating grout, consolidation is necessary to achieve complete filling of the grout space. Reconsolidation returns the grout to a plastic state and eliminates

the voids resulting from the water loss from the grout by the masonry units. It is possible to have a height loss of 8 in. (203 mm) in 8 ft (2.44 m).

Consolidation and reconsolidation are normally achieved with a mechanical vibrator. A low velocity vibrator with a ¾ in. (19.1 mm) head is used. The vibrator is activated for one to two seconds in each grouted cell of hollow unit masonry. When double open-end units are used, one cell is considered to be formed by the two open ends placed together. When grouting between wythes, the vibrator is placed in the grout at points spaced 12 to 16 in. (305 to 406 mm) apart. Excess vibration does not improve consolidation and may blow out the face shells of hollow units or separate the wythes when grouting between wythes.

3.5 F. *Grout key* — The top of ~~a~~ grout placement~~pour~~ should not be located at the top of a unit, but at a minimum of 1½ in. (38 mm) below the bed joint. If a lift of grout is permitted to set prior to placing the subsequent lift, a grout key is required ~~within the grout pour~~. This setting normally occurs if the grouting is stopped for more than one hour.

Maximum height of masonry to be built prior to grouting, ft (m)

Table 7: Grout space requirements

Grout type[1]	~~Maximum grout pour height, ft (m)~~	Minimum clear width of grout space,[2,3] in. (mm)	Minimum clear grout space dimensions for grouting cells of hollow units,[3,4] in. x in. (mm x mm)
Fine	1 (0.30)	3/4 (19.1)	1 1/2 x 2 (38.1 x 50.8)
Fine	5.33 (1.63)	2 (50.8)	2 x 3 (50.8 x 76.2)
Fine	12.67 (3.86)	2 1/2 (63.5)	2 1/2 x 3 (63.5 x 76.2)
Fine	24 (7.32)	3 (76.2)	3 x 3 (76.2 x 76.2)
Coarse	1 (0.30)	1 1/2 (38.1)	1 1/2 x 3 (38.1 x 76.2)
Coarse	5.33 (1.63)	2 (50.8)	2 1/2 x 3 (63.5 x 76.2)
Coarse	12.67 (3.86)	2 1/2 (63.5)	3 x 3 (76.2 x 76.2)
Coarse	24 (7.32)	3 (76.2)	3 x 4 (76.2 x 102)

[1] Fine and coarse grouts are defined in ASTM C476.

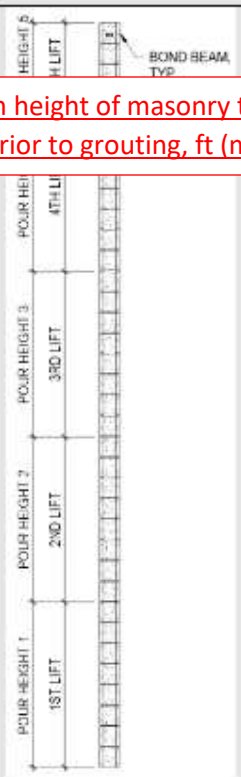
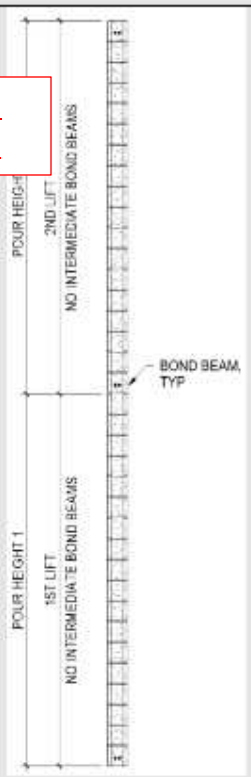
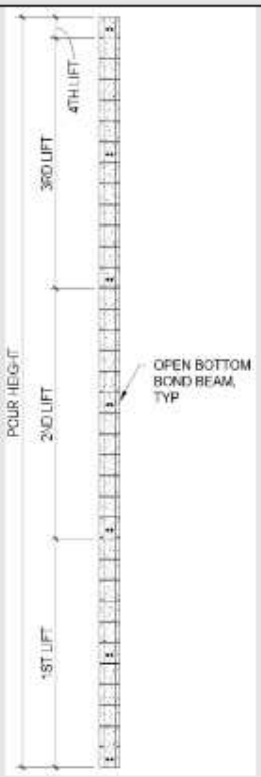
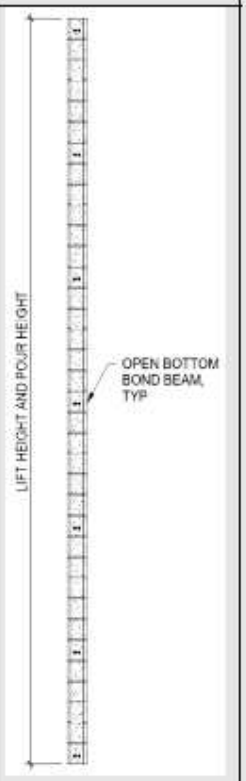
[2] For grouting between masonry wythes.

[3] Minimum clear width of grout space and minimum clear grout space dimension are the net dimension of the space determined by subtracting masonry protrusions and the diameters of horizontal reinforcement from the as-built cross section of the grout space. Select the grout type and maximum grout ~~pour~~ height based on the minimum clear space.

[4] Minimum grout space dimension for AAC masonry units shall be 3 in. (76.2 mm) x 3 in. (76.2 mm) or a 3 in. (76.2 mm) diameter cell.

[continues next page]

COMMENTARY

Type of Grouting*	Grouting with no cure time limit	Conventional grout with no intermediate bond beams	Conventional grout with intermediate bond beams	Self-consolidating grout with or without intermediate bond beams
TMS 602 Article	3.5 D.1.c 3.5 D.2.b	3.5 D.1.a	3.5 D.1.b	3.5 D.2.a
Lift Limit	5 ft-4 in.	12 ft-8 in.	See Limitation	Pour Height
~~Pour Height~~	Per Table 7	Per Table 7	Per Table 7	Per Table 7
Configuration				
Limitations	• Grout slump between 8 and 11 inches • Conventional grout or self-consolidating grout • ~~Lift height is 1-1/2 inches less than pour height for shear key, except at top of wall.~~	• Masonry cured for at least 4 hours • Grout slump between 10 and 11 inches	• Masonry cured for at least 4 hours • Grout slump between 10 and 11 inches • Lift cannot exceed ~~maximum~~ 12 ft-8 in. • Limit grout lift to the bottom of lowest bond beam that is more than 5 ft-4 in. above bottom of grout lift • ~~Lift height is 1-1/2 inches below the top of block for shear key, except at top of wall~~	• Masonry cured for at least 4 hours
Cleanouts Required	No		Yes	Yes

*Grout must conform to ASTM C476

Maximum height of masonry to be built prior to grouting, ft (m)

Stop grout 1-1/2 inches below top of lift to form grout key.

Figure SC-20 — Grout pour height and grout lift height

Comment Submittal Form

(Please use a separate form for each ballot item comment. Add pages if required)

2022 TMS 402/602 Committee
Main Committee Ballot: TMS 402/602 2022-19
Closing Date: October 3, 2021 at
11:59 pm Eastern Time

From: John Hochwalt
Phone: 206-622-5822
E-mail: john.hochwalt@kpff.com

Ballot Number: 19-PR-001
Vote: Negative

Reason for Above Vote:

While I am in agreement with the general approach to resolving the public comment, there are a handful of items that need to be addressed before these provisions will be ready for incorporation in the Code.

These items are as follows:

Code

Section 1.4

ACI 318 needs to be added to Section 1.4 as a standard coted in the code. With that done, the reference in Code Section 10.10.5.2.2 and Commentary Section 10.10.5.2 should not include "-19" as the edition of referenced standards is established by Section 1.4.

Section 2.1

The following comments are noted:

- If f_{yt} (used in Equation 10-7) is necessary nomenclature – I'm not sure that it is – it should be added here.
- y_t is defined relative to the tension face, but based on CC-10.10-2 it should be defined relative to the compression face.

Section 10.10.5.1.2

It sounds as if the transverse reinforcing in Section 10.10.5.1.2 would consist of vertical stirrups resisting f_{bv} and through-thickness stirrups resisting f_{bt}. Is the full A_{tr} required in each direction, or can it be split between the two directions? If it can be split, are there any limitations on how much can be provided in each direction? If $f_{bv} > \phi f_r$ and $f_{bt} < \phi f_r$, does A_{tr} only need to be provided in the vertical direction?

Section 10.10.5.1.3

The following comments are noted:

- In Section 10.10.5.1.3, reference is made to "post-tensioned tendons." It seems like the more generic term "post-tensioned reinforcement" should be used.
- y_t is defined relative to the tension face, but based on CC-10.10-2 it should be defined relative to the compression face.
- ΣP_{ps} is described as the "forces . . . at nominal moment." This is different than ACI 318 Section 25.9.2.1 which requires that the anchorage force exceed the least of:
    - $1.2(0.94f_{py})A_{ps}$
    - $1.2(0.80f_{pu})A_{ps}$

- Maximum jacking force designated by the anchor supplier multiplied by 1.2.

Perhaps this is overly conservative for masonry construction if we are anticipating that the prestressed reinforcement may be stressed to only a fraction of its capacity. But it does seem like consideration of the jacking condition should be required in some fashion as this can be a more extreme condition than at nominal capacity, especially if an unbonded system is used.

Commentary

Section 10.10.5.1.1

Guidance should be provided on which values in Table 9.1.9.2 are applicable to checking f_{bv} and f_{bt}. I believe that for beam with a post-tensioning force acting parallel to the bed joints that f_{bv} would be checked using f_r for normal to bed joints and f_{bt} would be checked using f_r for parallel to bed joints. Is that right?

Section 10.10.5.1.2

It would be helpful to illustrate A_{tr} – most users will easily visualizes the vertical stirrups, but some may have a hard time visualizing the through-thickness stirrups.

In Figure CC-10.10-2, the force is labeled at two locations as P_{pu}; it should be P_{ps}.

Section 10.10.5.3

It might be helpful to reference some of the standards that testing could be based on, see ACI 318.h

Future Business

As future business, the nomenclature d_v and y should be consolidated, as they both refer to the actual depth of the section. With the addition Table 4.3.5, it is no longer necessary that the description of d_v be tied to the direction in which shear is being considered.

TMS Antitrust Statement

The antitrust laws are the rules under which the United States competitive economic system operates. Their primary purpose is to preserve and promote free competition. It is The Masonry Society's policy to strictly comply in all respects with the antitrust laws.

Society meetings, association events and workshops by their very nature bring competitors together. Accordingly, it is absolutely necessary to avoid discussions of legally sensitive topics and especially important to avoid recommendations with respect to these sensitive subjects. Agreements to fix prices, allocate mark1e25ts or customers, engage in product boycotts and to refuse to deal with third parties are automatically or per se illegal under the antitrust laws. It doesn't matter what the reason for the agreement.

Accordingly, at any Society meeting, discussions of prices, including elements of prices such as allowances and credit terms, quality ratings of suppliers, and discussions which may cause a competitor to cease purchasing from a particular supplier, or selling to a particular customer, must be avoided. Also, there may not be any discussion that might be interpreted as a dividing up of territories or customers.

An antitrust violation does not require proof of a formal agreement. A discussion of a sensitive topic, such as prices, followed by parallel action by those involved in or present at the discussion is enough to show a price fixing conspiracy. As a result, those attending Society-sponsored meetings must remember the importance of avoiding not only unlawful activities, but even the appearance of unlawful activity.

As a practical matter, violations of these rules can have serious consequences for a company and its employees. The Sherman Antitrust Act is both a civil and criminal statute. Violations are felonies punishable by penalties of up to $10 million for corporations and by imprisonment of up to three years or penalties of up to $100,000, or both, for individuals. The Justice Department, state attorney general, and any person or company injured by a violation of the antitrust laws may bring civil actions for three times the amount of the damages, plus attorneys' fees and injunctive relief.

Antitrust investigations and litigation are lengthy, complex, disruptive and expensive. Therefore, all companies and their employees must not only comply with the antitrust laws in fact, but must conduct themselves in a manner that avoids even the slightest suspicion that the law is being violated. Associations, because they bring competitors together, are natural targets, along with members alleged to have participated with or through the association.

The following is a list of topics that must never be the subject of any type of agreement among competitors, whether explicit or implicit, formal or informal. Such topics should NEVER be discussed at TMS meetings. This list is not exhaustive of prohibited topics or subjects. Please consult legal counsel in the event of any confusion or question over whether a topic is permissible or appropriate for discussion among Society members:

a. Prices to be charged to clients, customers or by suppliers;
b. Specific methods by which prices are determined, with directions as to "how to do it" or even less;
c. Division or allocation of markets or customers;
d. Coordination of bids or requests for bids;
e. Terms and conditions of sales, including credit or discount terms;
f. Terms for distribution of products;
g. Targets for production of products or the level of production;
h. Specific profit levels;
i. Exchange of price information as to specific customers;
j. A boycott of or a refusal to deal with a customer or supplier;
k. Compilation of "approved" lists of customers or suppliers.
l. "Profit" levels...i.e., "here's what our members need to do to make money."
m. Whether a company's pricing practices are "unethical," "improper," etc.
n. Coordination of "bids" or "requests for bids" or requests for proposals ("RFPs").
o. Standards or codes to eliminate competition.

When in doubt about discussing any topic, consult with your own legal counsel, or with the Society's legal counsel, to be sure you are on safe antitrust ground. When unsure, play it safe and avoid the topic.

Conflict of Interest Considerations:

- placing (or the appearance of placing) one's own self-interest or any third-party interest above that of the

Society; while the receipt of incidental personal or third-party benefit may necessarily flow from certain Society activities, such benefit must be merely incidental to the primary benefit to the Society and its purposes;

- abusing their Board membership by improperly using their Board membership or the Society's staff, services, equipment, resources, or property for their personal or third-party gain or pleasure, or representing to third parties that their authority as a Board member extends any further than that which it actually extends;
- engaging in any outside business, professional or other activities that would directly or indirectly materially adversely affect the Society;
- engaging in or facilitate any discriminatory or harassing behavior directed toward Society staff, members, officers, directors, meeting attendees, exhibitors, advertisers, sponsors, suppliers, contractors, or others in the context of activities relating to the Society;
- soliciting or accepting gifts, gratuities, free trips, honoraria, personal property, or any other item of value from any person or entity as a direct or indirect inducement to provide special treatment to such donor with respect to matters pertaining to the Society without fully disclosing such items to the Board of Directors; and
- providing goods or services to the Society as a paid vendor to the Society only after full disclosure to, and advance approval by, the Board, and pursuant to any related procedures adopted by the Board.