Questions from

PUBLIC MEETING TO DISCUSS THE BACKGROUND AND DEVELOPMENTAL WORK FOR THE PROVISIONS ON MODULAR COMPOSITE CONSTRUCTION UNDER DEVELOPMENT BY AISC TC 12 SUBCOMMITTEE ON MODULAR COMPOSITE CONSTRUCTION

Date: August 9, 2011

These notes list the content of the comments or questions raised at the end of each session on Discussion Topics which the meeting was divided.

Session and comment / question number	Comment / Question	Follow-on comment or response
1.1	If the intent of the provisions was to allow use of non-yielding connectors.	The provisions allow the use of these connectors but require a reduction of their calculated capacity. For non-standard connectors, assumption of yielding connectors shall be verified by testing.
1.2	If the equation for the neutral axis correct for a reinforcement ratio of zero.	The equation is a curve fit and the reinforcement ratio of zero is out of its applicability because reinforcement ratios of zero are not allowed
1.3	If there were plans for the use of combined out-of-plane shear and tension interactions.	The provisions do not include that and, instead, use a concrete shear capacity of zero when the tensile force is significant.
1.4	If the soil-structure interaction analysis linear.	The provisions refer to the current practice.
1.5	Comments on stud anchors connected to the steel plate and types of connectors, framing, angles, etc.	
1.6	Clarification on what materials would result in a non-yielding tie bar.	Clarified that the non-yielding aspect in this case would relate to the connection of the tie bar to the plate and not to the tie bar material itself.
1.7	Comments related to the	

	analysis part with tie bar and that Section H of AISC N690 is integrity / detailing requirements	
1.8	If discrete tie bar spacing would increase shrinkage cracking?	Lack of internal reinforcement would affect tension stiffening of concrete and cracking may results in somewhat lowered stiffness
1.9	Comment that negative moments in a curved shell would increase demands on tie bars to resist delamination.	
1.10	Supporting length for the plates for buckling related to the bar sizes would it enhance elastic buckling	Some enhancement.
1.11	Question on methods to assess calculation of stud spacing related to plastic behavior of shear studs, gradient of bending moment, and elastic moment at section level rather than an element of the section.	Provisions for studs resemble those in AISC N690 Chapter I for composite beams with steel-based headed anchors, which do not use the traditional VQ/I approach over a length from maximum to minimum moment.
2.1	If the provisions would consider both allowable stress design (ASD) and load and resistance factor design (LRFD)	The provisions will consider both LRFD and ASD as in AISC N690.
2.2	If the provisions could consider just LRFD as is the trend in ACI 349?	No. The AISC positions is to maintain provisions for ASD.
(3-4).1	Does SC really have more strength than RC? What if more steel is added to RC components?	The opinion was that for certain response modes the strength is higher, such as in-plane shear. For other modes the higher strength of SC relates to the higher amount of steel resulting from the plate thickness that would be used.
(3-4).2	The provisions for ductile connections involve the	The 1% story drift appears sufficient for in-plane shear, for which

	requirement of assuring an overall story drift of 1% for the component. If this drift should be tied to the wall thickness, story height, and ductility of the component if the connection were stronger than the component?	achieving connections stronger than the component poses a greater challenge, for which yield tends to occur at a strain of 0.003 and for which a ductility of 3 is considered achievable.
(3-4).3	Are there plans for open technical publications covering the technical bases of the provisions, including peer-reviewed publications?	Those plans exist and are underway. Publications for the 2011 Structural Mechanics in Reactor Technology Conference (SMiRT 2011) were in preparation at the time of the meeting.
(3-4).4	Comment on connection forces expected and possible need for minimum provisions.	
(3-4).5	If there is a need to include limits on the actual strength of materials to account for possible over strength and how this might affect design assumptions.	There are not plans for provisions like those in AISC 341 which address over strength, or those in ACI 349 that limit the yield strength of some reinforcing steel. This is, in part, because the actual strength of plate materials, e.g., A572 tends not to exceed 1.1 times the specified and the provisions include factors by which the connection strength needs to exceed the strength of the component to ensure yield of the component.
(3-4).6	For certain wall dimensions, depending on the ratio of the wall dimensions to the wall thickness, suggested finite element sizes and averaging procedures for the calculation of design forces may underestimate the calculated design demands.	