

**PTI M-10 Web Meeting Minutes
Resolve negatives on Ballot M-10-1602**

June 30, 2016: 2:00 PM – 4:00 PM Eastern

Members Present:

Doug Schlegel, David Harrison, Neel Khosa, Marc Khoury, Larry Krauser, Thomas Mathews, Russ Price, Steve Ross, Todd Stevens, Bob Sward, Michael Williams

Members Absent:

Mauro Barbosa, Muhammad Cheema, Norris Hayes Rattan Khosa, Harley Nethken, Felix Sorkin, Pete Scoppa, Slava Tkachuk, Dan Williams

Associate Members Present:

Noli Alarcon, Sivakumar Munuswamy

Staff Present:

Ted Neff, Miroslav Vajvoda, Amy Dowell, Michael Hakam

Meeting was spent resolving the negatives on Ballot M-10-1602 as outlined in Attachment A.

PTI Committee: M-10 Unbonded Tendon Committee	Ballot: M-10-1602	Ballot Start Date:	May 9, 2016
Document Title: Proposed Revision to the PTI M10.2-xx Specification for Unbonded Single Strand Tendons		Ballot End Date:	May 23, 2016

Ballot Summary:

Ballot Item	Yes	No	Abs/Vote Not Returned	Meets ½ Rule	Meets 2/3 Rule	Item Passes	Voting Participation
1	11	5	4	Y	Y		Number of voting members: 20
2	13	3	4	Y	Y		Ballots not received from: Barbosa, Nethken, Scoppa
3	10	6	4	Y	N		
4	8	8	4	N	N		Ballot received from associate members: Alarcon, Lee, Munuswamy, C. Williams
5	13	3	4	Y	Y		

Voting: Y – Approve; Y-E – Approve with Editorial Comment –N – Negative; A – Abstain.

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Voting Members /Section	1	2	3	4	5
Schlegel	N	Y-E	Y-E	N	Y-E
Barbosa					
Cheema	Y	Y	Y	Y	Y
D. Harrison	A	A	A	A	A
Hayes	N	N	N	N	N
N. Khosa	Y-E	Y	N	N	Y
R. Khosa	Y-E	Y	N	N	Y
Khoury	Y	Y	Y-E	Y	Y
Krauser	Y-E	Y	Y-E	Y-E	Y
Mathews	N	N	N	N	N
Nethken					
Price	N	N	N	N	N
Ross	Y	Y	Y	Y	Y
Scoppa					
Sorkin	Y	Y	Y	Y	Y
Stevens	Y	Y	Y	Y-E	Y
Sward	Y	Y	Y	N	Y
Tkachuk	Y	Y	Y	Y	Y
D. Williams	Y	Y	Y	Y	Y
M. Williams	N	Y	N	N	Y

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Associate Members /Section	1	2	3	4	5
Alarcon*	Y	Y	Y	Y	Y
Bradley*					
Carnell*					
Deitrich*					
Field*					
Fossing*					
Frenn*					
J. Harrison*					
Kochis*					
Kumar*					
Lee*	Y	Y	Y	Y	Y
McBride*					
Mikula*					
Munuswamy*	Y	Y	Y-E	Y-E	Y-E
Paderofsky*					
Pedraza*					
Pethani*					
Sohal*					
Sterling*					
Taylor*					
C. Williams*	Y	Y	Y	Y	Y

*nonvoting members

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#	Name	Ballot Item #	Vote: Y / Y-E / N / A	Y = Yes Y-E = Yes with Comment N = No (Must include a reason and proposed solution) A = Abstain Comments/Proposed Resolution below	Committee Proposed Resolution
	Alarcon*	All	Y	I approve of all 5 Ballot Items as Proposed	
	Cheema	All	Y	I approve of all 5 Ballot Items as Proposed	
	Lee*	All	Y	I approve of all 5 Ballot Items as Proposed	
	Ross	All	Y	I approve of all 5 Ballot Items as Proposed	
	Sorkin	All	Y	I approve of all 5 Ballot Items as Proposed	
	Tkachuk	All	Y	I approve of all 5 Ballot Items as Proposed	
	C. Williams*	All	Y	I approve of all 5 Ballot Items as Proposed	
	D. Williams	All	Y	I approve of all 5 Ballot Items as Proposed	
	D. Harrison	All	A		
1	Hayes	1	N	<p>Remove the requirement for PT coating to be present full length this would include the wedge length.</p> <p>Not enough clarity on the measurement of movement and the amount of force accepted. Also the load cell is required to be calibrated.</p> <p>Proposed Resolution: Restate amount of P-T coating on the bare section of strand. Do testing to determine the amount of force needed and define the amount of movement allowed.</p>	<p><u>Motion to find unrelated – not related to proposed change. Take up as new business</u></p> <p>Krauser/Cheema 10-1-0 ITEM PASSES</p>
2	N.Khosa	1	Y-E	<p>2.4.1.1.4 Add “The sheathing should not have tensile cracks due to the restraint device.”</p> <p>2.4.1.1 Recommend the focus should be a performance-based specification rather than a product-based specification.</p>	

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3	R.Khosa	1	Y-E	<p>2.4.1.1.4 Add “The sheathing should not have tensile cracks due to the restraint device.”</p> <p>2.4.1.1 Recommend the focus should be a performance-based specification rather than a product-based specification.</p>	
4	Krauser	1	Y-E	Editorial – Add Section 2.5.9 into table of contents – presently not there	
5	Mathews	1	N	<p>State reason: No fabrication process is allowed to damage sheathing or reduce its thickness.</p> <p>Proposed Resolution: d. Have a watertight, positive mechanical <i>or monolithic</i> connection to the anchorage protection or coupler enclosure and a watertight connection at the tendon sheathing. The watertight connection shall be achieved by either a sheathing overlap system meeting the requirements of Section 2.4.1.1.3, a sheathing restraint system meeting the requirements of Section 2.4.1.1.4, or a combination (hybrid) of both. <i>Connecting components shall not score, cut, or otherwise damage the sheathing.</i></p>	<p><u>Motion to find “or monolithic” change persuasive</u></p> <p><u>Motion to find “Connecting components shall not score, cut, or otherwise damage the sheathing.” nonpersuasive as it is already in Section 2.5.9.3 (g)</u></p> <p><u>Krauser/Sorkin</u> <u>7-5-0</u> <u>MOTION DOES NOT PASS 40% RULE – will be revisited in next web meeting</u></p> <p><u>Motion to find Non-persuasive. There is no wording in the specification about “reducing thickness of sheathing”. No need to add “Connecting components shall not score, cut, or otherwise damage the sheathing” – no damage to the sheathing is a criteria of 2.5.9.3.g.</u></p> <p><u>Krauser/no second – need new motion</u></p> <p><u>Motion to find persuasive with change shown to the left, striking “or otherwise”</u> <u>Mathews/Price</u> <u>8-3-0 →9-2-0</u> <u>Need to resolve negatives</u></p>

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				<p><u>Motion to find negative voters nonpersuasive Mathews/Price</u> <u>9-1-0</u> <u>The negative was found nonpersuasive and the motion passes</u></p>
6			<p>Any system that meets all of the requirements of either connection type should be accepted. For example, a compliant overlap connection that also includes some form of restriction of sheathing movement, or any other beneficial feature, would meet the specification. Conversely, any system qualifying as a sheathing restraint system under the spec, may or may not include an overlap or other beneficial feature. Hybrid systems, just as other systems, should be allowed if they meet either of the requirement sets for overlap or restraint.</p> <p>Proposed Resolution: Hybrid encapsulation systems which rely on utilize both sheathing overlap and sheathing restraint to provide and maintain a watertight connection shall meet the requirements of both either 2.4.1.1.3 and or 2.4.1.1.4.</p>	<p><u>Motion to find this item and the next persuasive</u> <u>Sward/Price</u> <u>11-1-0</u> <u>Need to resolve negative – negative withdrawn by Krauser</u> <u>9-1-0</u> MOTION PASSES</p>
7			<p>Verification of compliance with overlap and sheath restraint is necessary.</p> <p>Proposed Resolution: f. Be translucent or have other method of verifying compliance with Sections 2.4.1.1. 1-e.2 and through 2.4.1.1. 2-3 4.</p>	
8			<p>2" overlap was balloted and approved <u>by M-10 committee</u> in Cancun.</p> <p>Proposed Resolution:</p>	<p><u>Opening statement amended as shown by Mathews.</u></p> <p><u>Motion to find whole section nonpersuasive</u></p>

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				<p>2.4.1.1.3 Sheathing Overlap Connection Sheathing overlap systems must allow for a minimum sheathing movement of 4". After fabrication and up until shipment to the jobsite, have a minimum 4 2 in. [100 50 mm] overlap and maintain a seal between the end of the extruded sheathing covering the prestressing steel and the watertight connection at the tendon sheathing.</p>	<p>Krauser/Sorkin 5-6-1 MOTION FAILS</p> <p><u>Motion 3a to find "Sheathing overlap systems must allow for a minimum sheathing movement of 4". " – persuasive.</u></p> <p>Price/M. Williams 11-0-0 MOTION PASSES</p> <p><u>Motion 3b to find change from 4 in. overlap to 2 in. overlap nonpersuasive –</u></p> <p>Krauser/Sorkin 11-1-0 MOTION PASSES – leave at 4 in</p>
9				<p>1" engagement was discussed and agreed upon in Long Beach.</p> <p>Proposed Resolution: 2.4.1.1.4 Sheathing Restraint Connection The sheathing-anchor connection shall engage and cover a minimum of 1" of sheathing, prevent movement of the sheathing due to handling and temperature change, and maintain a seal between the end of the extruded sheathing covering the prestressing steel and the watertight connection at the tendon sheathing. The anchorage shall be tested in accordance with and meet the requirements of Section 2.5.9.</p>	<p><u>Motion to find nonpersuasive, no change</u></p> <p>Krauser/Sorkin 8-3-1 MOTION PASSES</p>
10	Price	1	N	<p>State reason: The Specification should not be changed based on the development of a product; it should be written to specify the performance standards to which unbonded post-tensioning</p>	<p><u>a) Motion to find Persuasive</u></p> <p>Mathews/Harrison 6-7-0</p>

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				systems should perform <u>and</u> allow product development to be made and measured. Proposed Resolution: Remove changes to 2.4.1.1.1.d Delete “and 2.4.1.1.3 in subsection 2.4.1.1.1.f Change 2.4.1.1.1.f to 2.4.1.1.1.e Delete 2.4.1.1.3 and 2.4.1.1.4	MOTION FAILS <u>b) Motion to find nonpersuasive and take up looking at revising specification to be only performance based as new business.</u> Krauser/Sorkin 10-3-0 MOTION PASSES
11	Schlegel	1	Y-E	In the last sentence of Section 2.4.1.1.1.d add “Sections” after “both”.	
12	Schlegel	1	Y-E	In the first sentence of Section 2.4.1.1.3 revise to read “After fabrication....to the job site, <u>shall</u> have a minimum...”	
13	Schlegel	1	N	In Section 2.4.1.1.4 revise beginning of sentence to read “The sheathing- <u>fixed</u> anchorage connection shall.....” It is my understanding that this connection only applies at the fixed anchorage. If it were located at both the stress and fixed anchorage, there would be a potential to tear apart the sheathing anywhere along the length of the tendon.	<u>Motion to find persuasive.</u> Price/Schlegel 9-2-0 <u>Price Sward withdrew negative</u> <u>Sorkin explained position and is not withdrawing the negative.</u> <u>Motion to find Sorkin’s negative nonpersuasive</u> Price/Schlegel 10-1-1 MOTION TO FIND NEGATIVE NONPERSUASIVE PASSES MOTION PASSES – CHANGES TO BE MADE AS PROPOSED
END OF June 3, 2016 WM					

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14	Hayes	2	N	<p>State reason: The addition of encapsulation system is too open and not defined also don't remove the cap prior to filling with grout.</p> <p>Proposed Resolution: This section should be very clear to the inspectors and define what they should inspect.</p>	<p><u>Motion to find the negative persuasive and make editorial changes</u></p> <p><u>3.7.5.6 reads ... change independent inspection agency to "the inspection agency"in accordance with Section 3.2</u></p> <p><u>Stevens/Price</u> <u>8-0-1</u></p>
15	Mathews	2	N	<p>State reason: The term "solely" adds clarification of separate system requirements.</p> <p>The phrase "into the restraint device" is confusing. Slippage will likely be out of the restraint device, but any movement releases the restraint.</p> <p>Proposed Resolution: 3.7.5.6 – Encapsulation Prior to concrete placement install all components of the encapsulation system following the PT supplier's instructions to completely seal the anchorage from moisture. For encapsulation systems which utilize a sheathing overlap connection per Section 2.4.1.1.3, the sleeve shall overlap the sheathing by a minimum of 1 in. [25 mm] at all times prior to concrete placement. For encapsulation systems which rely <i>solely</i> on a sheathing restraint connection per Section 2.4.1.1.4 <i>without complying with all of the requirements of Section 2.4.1.1.3</i>, the sheathing of the tendon shall be firmly engaged without slippage into the restraint device.</p>	<p><u>Motion to find persuasive</u> <u>Sward/Ross</u> <u>8-0-1</u> <u>MOTION PASSES</u></p>
16				<p>The connection between the encapsulation components and the sheathing shall be watertight meeting the requirements of Section 2.4.1.1. Encapsulation caps shall be installed as soon as</p>	<p><u>Find persuasive</u> <u>Change The independent inspection agency shall verify the proper installation of the encapsulation</u></p>

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			possible, <i>and</i> but within 8 hours after the cutting of the tendon tails. An independent inspection agency shall verify the proper installation of the encapsulation system caps prior to filling the stressing pockets.	system caps prior to filling the stressing pockets in accordance with section 3.2.2 Price/Stevens 8-0-0 MOTION PASSES
17			<p>The term “solely” adds clarification of separate system requirements.</p> <p>The phrase “into the restraint device” is confusing. Slippage will likely be out of the restraint device, but any movement releases the restraint.</p> <p>Proposed Resolution: 3.7.6.5 – Encapsulation Prior to concrete placement install all components of the encapsulation system following the PT supplier’s instructions to completely seal the anchorage from moisture. For encapsulation systems which utilize a sheathing overlap connection per Section 2.4.1.1.3, the sleeve shall overlap the sheathing by a minimum of 1 in. [25 mm] at all times prior to concrete placement. For encapsulation systems which rely <i>solely</i> on a sheathing restraint connection per Section 2.4.1.1.4 <i>without complying with all of the requirements of Section 2.4.1.1.3</i>, the sheathing of the tendon shall be firmly engaged without slippage into the restraint device. After stressing, complete the intermediate encapsulation by installing the intermediate components following the PT supplier’s instructions to completely seal the wedge cavity from moisture. The connection between the encapsulation components and the sheathing shall be watertight meeting the requirements of Section 2.4.1.1. Encapsulation components shall be installed within 8-hours</p>	<p><u>Motion to find 17 and 18 persuasive. And make changes approved in 15</u></p> <p>Schlegel/Williams 9-0-1 MOTION PASSES</p>

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18				<p>The term “solely” adds clarification of separate system requirements.</p> <p>The phrase “into the restraint device” is confusing. Slippage will likely be out of the restraint device, but any movement releases the restraint.</p> <p>Proposed Resolution: 3.7.7.4 – Encapsulation Cap the wedge cavity with an encapsulation cap and install sleeves and seals connecting sheathing to anchorage to completely seal the area against moisture. For encapsulation systems which utilize a sheathing overlap connection per Section 2.4.1.1.3, the sleeve shall overlap the sheathing by a minimum of 1 in. [25 mm] at all times prior to concrete placement. For encapsulation systems which rely <i>solely</i> on a sheathing restraint connection per section 2.4.1.1.4 <i>without complying with all of the requirements of Section 2.4.1.1.3,,</i> the sheathing of the tendon shall be firmly engaged without slippage into the restraint device. The connection between the encapsulation components and the sheathing shall be watertight meeting the requirements of Section 2.4.1.1. The encapsulation cap shall be installed after coating the strand tail and wedge cavity with PT coating meeting the requirements of Sections 2.2.1 and 2.2.2.</p>	
19	Price	2	N	<p>State reason: The Specification should not be changed based on the development of a product; it should be written to specify the performance standards to which post-tensioning systems should perform <u>and</u> allow product development to be made and measured.</p> <p>Proposed Resolution: Delete added sentences(2) in 3.7.5.6; keep other changes</p>	<u>Withdrawn with the understanding that it will be taken up as new business</u>

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				Delete added sentences(2) in 3.7.6.5 Section 3.7.7.4/Modify the 1 st sentence to: “..and connect the tendon sheathing to the anchorage to complete the encapsulation system against moisture.” Delete added sentence #1 and #2 in 3.7.7.4 keeping added sentence #3.	
20	Schlegel	2	Y-E	In Sections 3.7.5.6 and 3.7.6.5 delete the entire 3 rd sentence. These two types of anchorages do not use a “sheathing restraint connection”.	
21	Schlegel	2	Y-E	In section 3.7.7.4 revise 1 st sentence to read “ Cap the wedge cavity with an <u>An</u> encapsulation cap and connect the <u>shall be connected to the</u> sheathing against moisture.”	
22	Schlegel	2	Y-E	In section 3.7.7.4, 3 rd sentence revise wording to read “...per Section 2.4.1.1.4 the sheathing of the tendon shall be firmly engaged without slippage into the restraint device <u>to prevent slippage.</u> ”	
23	Hayes	3	N	State reason: The ¾” overlap not defined enough to be clear. Proposed Resolution: The ¾” overlap should be measured for the seal surface of the tube.	<u>Motion to find persuasive and make proposed resolution change.</u> <u>Also change in Section 3.2 field requirement to already resolved section.</u> <u>Price/Harrison</u> <u>9-0-1</u> <u>MOTION PASSES</u>
24	N.Khosa	3	N	2.5.8 Delete mention of sheathing overlap and sheathing restraint connections. Recommend the focus should be a performance-based specification (2.5 psi or 10 psi) rather than a product-based specification.	<u>Withdrawn</u>
25	R.Khosa	3	N	2.5.8 Delete mention of sheathing overlap and sheathing restraint connections.	<u>Withdrawn</u>

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				Recommend the focus should be a performance-based specification (2.5 psi or 10 psi) rather than a product-based specification.	
26	Khoury	3	Y-E	Section 2.5.8.2.b: Remove “of no less than 2.5psi [0.0172 MPa]” to match section 2.5.8.1.b	
27	Krauser	3	Y-E	Editorial – 2.5.8.3 add to end of paragraph about overlap: “Assemblies shall be tested in accordance with Section 2.5.8.2 with overlap as identified in 2.5.8.1.b. ”	
28	Mathews	3	N	<p>State reason: No data exists that indicates the current specification is insufficient, nor that the test needs to be more severe. If the rationale for increasing the pressure is to convince the end user to use new configurations, then increased severity may only be appropriate for new configurations. If that is not the rationale, then hydrostatic test severity should be the same (1.25 psi and 10 psi) for both types.</p> <p>Any system that meets all of the requirements of either connection type should be accepted. For example, a compliant overlap connection that also includes some form of restriction of sheathing movement, or any other beneficial feature, would meet the specification. Conversely, any system qualifying as a sheathing restraint system under the spec, may or may not include an overlap or other beneficial feature.</p> <p>Proposed Resolution: 2.5.8.1.b – Assemblies: <i>Sheathing Overlap Connection</i> The sheathing shall be pulled and withdrawn from the anchorages so that a maximum of a ¼ -in. (+ 0 or – 1/8-in) overlap of the sleeve over the sheathing remains. Anchorage assemblies with the ¾-in. overlap shall be arranged in a position</p>	<p>Motion to revise as proposed, also related negative comments to 2.5 → 1.25 psi</p> <p>Schlegel/Williams 9-0-0 MOTION PASSES</p>

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				<p>to ensure a uniform hydrostatic pressure of no less than 1.25 psi [0.0086 MPa] for a period of 24 hours. The following minimum uniform hydrostatic pressure shall be used in the test:</p> <p>1) For building and other applications governed by ACI 318: 2.5 1.25 psi [0.0172 0.0086 MPa]</p> <p>2) For environmental structures and other applications governed by ACI 350: 10 psi [0.0688 MPa]</p> <p>2.5.8.3 Encapsulation System Using a Combination (Hybrid) of a Sheathing Overlap and a Sheathing Restraint Connection</p> <p>Assemblies shall be tested in accordance with Section 2.5.8.2</p>	
29	Munuswamy*	3	Y-E	<p>Add" whichever is earlier." At end of second paragraph, Section 2.5.8</p> <p>Replace "pass" with "be acceptable" in two locations in Section 2.5.8.4</p>	
30	Price	3	N	<p>State reason: The Specification should not be changed based on the development of a product; it should be written to specify the performance standards to which post-tensioning systems should perform <u>and</u> allow product development to be made and measured.</p> <p>Proposed Resolution: Change title of 2.5.8.1 to "System Testing" Delete "Sheathing Overlap Connection" in title of 2.5.8.1.a Delete "Sheathing Overlap Connection" in title of 2.5.8.1.b Replace the 1st sentence with "Assemble the fixed, stress and intermediate encapsulated anchorage assemblies following the manufacturer's instructions." Delete "with the ¾-in. overlap" Delete "Sheathing Overlap Connection" in title of 2.5.8.1.c</p>	<p><u>Withdrawn with the understanding that it will be taken up as new business</u></p>

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				Delete Section 2.5.8.2 Delete Section 2.5.8.3 Change 2.5.8.4 to 2.5.8.2	
31	Schlegel	3	Y-E	To be consistent with the rest of the document revise the 1 st sentence to read “Representative couplers and anchorages <u>and couplers</u> shall be tested...”	
32	Schlegel	3	Y-E	In Section 2.5.8.3 revise the last sentence to “Assemblies...with Sections <u>2.5.8.1 and 2.5.8.2</u> . I think if the fixed anchorage uses the sheathing restraint connection and the stressing anchorage uses the sheathing overlap we need to include both sections.	
33	M.Williams	3	N	Sections 2.5.8 hydrostatic pressure revision from 1.25 to 2.5 psi. Do the current systems meet the new requirements? Proposed Resolution: Recommend testing or documentation prior to implementation into the spec’s	<u>Withdrawn, resolved with #28</u>
34	M.Williams	13	N	Page 31 Line 24 Strike “manufacture” Proposed Resolution: Replace with Independent Lab	<u>Moved per discussion in WM on 6/3/16</u> <u>Motion to find persuasive and add wording “representative samples from production runs selected by the independent testing laboratory and assembled by the manufacturer”</u>
35				Page 30 Line 15 Strike “manufacture” Proposed Resolution: Replace with Independent Lab	<u>Price/Mathews</u> <u>8-1-1</u> <u>PNegative needs to be resolved</u> <u>Motion to find negative nonpersuasive</u> <u>Schlegel/Sward</u> <u>9-0-0</u> <u>MOTION PASSES</u>

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36				<p>Sections 2.5.8 & 2.5.9 hydrostatic pressure changed from 1.25 to 2.5 psi. Do the current systems meet the new requirements?</p> <p>Proposed Resolution: Recommend testing or documentation prior to implementation into the spec's</p>	<u>Withdrawn, resolved with #28</u>
<u>End of WM on 6/30/16 (Items 62 and 63 were also resolved in this meeting)</u>					
37				<p>Section 2.5.9 Page 32 Lines 12-13 I cannot vote for these proposed values without prior testing, evaluation, independent documentation, task force report or personal knowledge.</p> <p>Proposed Resolution: Recommend testing or documentation prior to implementation into the spec's</p>	
38	Hayes	4	N	<p>State reason: The two test criteria is not supported by any independent test report only by a unknown sources.</p> <p>Proposed Resolution: Committee to set standard of criteria and have independent test preformed.</p>	
39	N.Khosa	4	N	<p>2.5.9.1 Representative samples from production runs, selected and assembled by the manufacturer shall be used in testing.</p> <p>Proposed Resolution:</p> <p>Manufacturer shall include the extrusion process as well as material certificates for the type of HDPE/HDPP and PT coating used in the testing.</p> <p>New business: Develop performance specification for plastic raw material for extrusion.</p>	

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40				<p>2.5.9.3-c Is 150 lbs enough or too much force?</p> <p>Proposed Resolution: Change 150 lbs to 3 values (50, 150, 500 lbs) until more data is gathered.</p>	
				<p>2.5.9.3-d The restraint connection will be “active” for the life of the tendon. 15 seconds isn’t a long enough duration.</p> <p>Proposed Resolution: Change 15 seconds to 5 days</p>	
41	R.Khosa	4	N	<p>2.5.9.1 Representative samples from production runs, selected and assembled by the manufacturer shall be used in testing.</p> <p>Proposed Resolution: Manufacturer shall include the extrusion process as well as material certificates for the type of HDPE/HDPP and PT coating used in the testing.</p> <p>New business: develop performance specification for plastic raw material for extrusion.</p>	
42				<p>2.5.9.3-c Is 150 lbs enough or too much force?</p> <p>Proposed Resolution: Change 150 lbs to 3 values (50, 150, 500 lbs) until more data is gathered.</p>	
43				<p>2.5.9.3-d The restraint connection will be “active” for the life of the tendon. 15 seconds isn’t a long enough duration.</p> <p>Proposed Resolution: Change 15 seconds to 5 days.</p>	
44	Krauser	4	Y-E	<p>Editorial – 2.5.9.3 change “connection” to “seal” – this is a better description for of the location for the sheathing not to move:</p>	

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				<p>“For the sheathing restraint test to pass, there shall be no observed movement of the sheathing away from its connection seal at the anchorage ... “</p>	
45	Mathews	4	N	<p>State reason: Any system that meets all of the requirements of either system may employ additional features. For example, an enhancement of an overlap system that increases the hydrostatic pressure resistance may also provide sheathing restraint. This results in an improvement and should not subject the system to additional tests if it meets all of the requirements of the overlap system.</p> <p>Proposed Resolution: 2.5.9 – Sheathing Restraint Test This test is applicable to anchorages and couplers that use solely utilize a sheathing restraint connection without also fully complying with the requirements of an overlap connection, as part of the encapsulation system. Representative anchorages and couplers shall be tested to ensure the effectiveness of the sheathing restraint connection in conformance with Sections 2.5.9.1 through 2.5.9.4. Stressing, intermediate, and fixed anchorage assemblies shall each be tested. Three tests are required for each assembly. Tests shall be performed, or observed and certified by an independent testing laboratory accredited under ASTM C1077. Retesting is required every five years or whenever a component of an assembly changes or the testing criteria changes</p>	

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46			<p>State reason: Independent of the sheathing restraint, this requirement equalizes the sealing test of both systems.</p> <p>Proposed Resolution: 2.5.9.2 – Assemblies Test Specimen – anchorage with sheathing restraining device and 36 in. [0.9 m] of sheathed strand. Sheathing restraining device retains sheathing at one end with ¾" (+0" / -1/8") of sheathing engaged. Sheathing at opposite end is held by some kind of gripping system, with the end of the gripping device 30 in. (+ or – ½ in.) [0.8 m + or – 13 mm] from the bearing</p>	
47			<p>This criteria is confusing and the deleted section is covered in the acceptance section. Clarification is necessary.</p> <p>Proposed Resolution: 2.5.9.3 -- Test procedure: During the test procedure, the following steps are required: a) Measure the distance of the end of the gripping device from the bearing side of the anchorage and record the value. b) Gradually apply load to the end of the sheathing by pulling only on the gripped sheathing. c) Slowly apply load until sheathing elongates a minimum of 1 in. [25 mm], and a minimum force of 150 lbs [68.2 kg] is achieved</p>	
48			<p>.If the sheathing should break along the length of the sample no less than 1 in. [25 mm] from the anchorage prior to achieving both criteria, the test shall be rejected and a new test specimen shall be prepared and retested.</p> <p>Once both criteria have been met, hold the force for 15 seconds.</p> <p>e) Measure and record the distance of the end of the gripping system from the bearing side of the anchorage.</p>	

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				<p>f) Record the force shown on the load cell.</p> <p>g) Inspect the anchorage and the connection to the sheathing. Note any movement of the sheathing away from the anchorage, and any damage to the sheathing or anchorage.</p> <p>h) Tested specimens shall be retained for use in the Hydrostatic Test in accordance with Section 2.5.8.</p>	
49				<p>2.5.9.3 – Acceptance Criteria</p> <p>For the sheathing restraint test to pass, there shall be no observed movement of the sheathing away from its connection at the anchorage nor any damage to the sheathing or anchorage. All three tests for each anchorage assembly shall pass for the system to pass. <i>Following hydrostatic testing, the assemblies shall be inspected to confirm that the sheathing is undamaged.</i></p>	
50	Munuswamy*	4	Y-E	<p>Add" whichever is earlier." At end of second paragraph, Section 2.5.9</p> <p>Replace "some kind of" with "an appropriate" in Section 2.5.9.2</p> <p>Replace "Slowly apply load" with "Application of load shall continue" in Section 2.5.9.3 c)</p> <p>Replace "Inspect" with "After releasing the force, inspect" in Section 2.5.9.3 g)</p> <p>Replace "pass" with "be acceptable" in two locations in Section 2.5.9.3</p> <p>The purpose of this test to verify the effectiveness of the sheathing restraint connection by subjecting the connection to 150 lb force with a min. elongation of 1" (for a 30" gage length? It is not clear about the gage length of the specimen). A schematic sketch would help alleviate any ambiguities.</p>	

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51	Price	4	N	<p>State reason: The Specification should not be changed based on the development of a product; it should be written to specify the performance standards to which post-tensioning systems should perform <u>and</u> allow product development to be made and measured.</p> <p>Proposed Resolution: Delete Section 2.5.9</p>	
52	Schlegel	4	Y-E	<p>In section 2.5.9. 3rd and 4th sentences. It is my understanding that this connection is intended to be used only at the fixed anchorage assemblies. Revise sentences to read "Stressing, intermediate, and <u>Three</u> fixed anchorage assemblies shall each be tested. Three tests are required for each assembly."</p>	
53	Schlegel	4	Y-E	<p>In section 2.5.9.2. I am confused. Is the tolerance plus or minus ½"? If so wouldn't the metric conversion be plus or minus 13mm?</p>	
54	Schlegel	4	N	<p>In section 2.5.9.3.c. Are the 150 lbs and 1 inch long sheathing elongation the correct numbers? Maybe before an actual number is specified, there needs to be more investigation or some sort of test(s) performed to arrive at a more justifiable number. Would it make a difference if the plastic sheathing was made of virgin material versus re-ground material? I would hate to specify a number that can only be attained using virgin material. Unless things have drastically changed, I doubt many PT companies purchase virgin plastic.</p>	
55	Schlegel	4	Y-E	<p>Change Section 2.5.9.3 – Acceptance Criteria to 2.5.9.4 Acceptance Criteria</p>	
56	Schlegel	4	Y-E	<p>Assuming it is agreed that these tests are only for the fixed anchorage assemblies, revise the last sentence to read "All three tests for each anchorage assembly shall pass for the system to pass."</p>	
57	Stevens	4	Y-E	<p>State reason: 2.5.9.3 We may need some verbage or clarification on the No damage to sheathing portion. The test calls for elongation the sheathing by a minimum of 1" which</p>	

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				means there would be some damage as the sheathing would be stretched and also would no longer be 50 mills thick	
58	Sward	4	N	<p>The acceptance Criteria in line 5 of page 33 "... nor any damage to the sheathing or anchorage..." is too vague.</p> <p>Proposed Resolution: Rerword to read "... nor any damage to the sheathing or anchorage that compromises the systems integrity."</p>	
59	M.Williams	4	N	<p>Section 2.5.9 Page 32 Lines 12-13 I cannot vote for these proposed values without prior testing, evaluation, independent documentation, task force report or personal knowledge.</p> <p>Proposed Resolution: Recommend testing or documentation prior to implementation into the spec's</p>	
60	M.Williams	4	Y-E	<p>Section 2.5.2 Page 32 Line 4 strike "some kind of"</p> <p>Proposed Resolution: Insert "a"</p>	
61	M.Williams	4	N	<p>Section 2.5.9.2 Page 32 Lines 2-6 I don't know if this test replicates real jobsite conditions or performance requirements.</p> <p>Proposed Resolution: Recommend testing at multiple forces and elongations with several sheathing samples submitted by the plants for testing, similar to the "PT Coating sample evaluation. This would allow for testing the components with current industry resins.</p>	
62	Hayes	5	N	<p>State reason: The criteria for inspection is not detailed enough for the inspector as far as rejecting and what and who defines the fix.</p> <p>Proposed Resolution:</p>	<p><u>Motion to find Nonpersuasive</u></p> <p>Sward/Stevens 9-0-1 MOTION PASSES</p>

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				An example is the overlap issue as seen by the inspector. I believe we should add a lot more detail and who approves the fixes.	
63	Mathews	5	N	<p>State reason: The intention of this revision is to “require inspection of the entire encapsulation system”. However, the context of the ballot and the order of the inspection points apply this to stressing ends only. Inspecting sheathing connections for slippage beyond the seal may be more than just visual.</p> <p>Proposed Resolution: 3.2 – Inspection Conduct a visualan inspection to ensure the requirements of this Specification and Contract Documents are met. This inspection shall be performed by personnel certified in accordance with PTI’s Level 2 Unbonded PT Inspector program or as otherwise specified. Submit documentation of inspector certification. Inspection shall include, but not be limited to:</p> <ul style="list-style-type: none"> • Material cleanliness; • Location and quantity of materials; • Corresponding material and stressing equipment certifications; • Stressing of prestressing tendons; • Length of strand tails; • Installation of encapsulation caps, sleeves, and sheathing-anchor connections <i>at all anchor locations (stressing, intermediate, and fixed) prior to concrete placement</i>; and • Filling of stressing pockets. 	<p><u>Motion to find persuasive – make editorial comments shown in green</u></p> <p>Sward/Schlegel 10-0-0 MOTION PASSES</p>
64	Munuswamy*	5	Y-E	Move “sleeves and sheathing-anchor connections;” up behind first bullet point in Section 3.2	

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65	Price	5	N	<p>State reason: The Specification should not be changed based on the development of a product; it should be written to specify the performance standards to which post-tensioning systems should perform <u>and</u> allow product development to be made and measured.</p> <p>Proposed Change: Delete added sentences(2) in 3.7.5.6; keep other changes</p>	<u>Withdrawn with the understanding that this will be introduced as new business</u>
66	Schlegel	5	Y-E	<p>Section 3.7.5.6. This is a repeat of the same section in Ballot item #2. The sheathing restraint connection is not intended to be used at the stressing anchorages. Therefore delete the entire 3rd sentence.</p>	
67	Price			<p>Suggested additional change.</p> <p>Proposed Change: Modify section 1.5.2 – Anchorages and Couplers 1.5.2.a – Static and Fatigue test reports ... 1.5.2.b – Encapsulation system components and assembly instructions specifying the method for the connection of the tendon sheathing to the anchorage and the capping of the wedge cavity including watertight testing performance reports of representative production assemblies in accordance with Section 2.5.8.</p>	

*nonvoting members