



TECHNICAL ADVISORY COMMITTEE Memorandum of Meeting

10:00 A.M. Wednesday March 1st, 2017 – Cambridge, Ontario

Present:

Kevin Williams (Chair)	Atlantic	Nick Spence	Atlantic
Ian Berry	Warner	Lyndsay Dokas	Armtec
Dave Watson	Leland	Lynn Riley	Tee Group
Randy McDonald	Armtec	Ray Wilcock	CSPI
Kamran Derayah	ArcelorMittal		

Absent:

Shane Setter	Ironside	Chris Groot	ES Hubbell
Mike Mounts	Valfilm	Byron Nelson	Leland
Phil Carroll	Atlantic	Bruce Matheson	Frontier

Guests:

Armin Hadzidedic	Atotech	Juan Andrejin	Leland
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1. Welcome and Opening Remarks

Kevin Williams opened the meeting at 10:00am and welcomed everyone. Go-To-Meeting was used. Attendance was taken and is recorded above.

2. Review Minutes from December 8th, 2016

Minutes were reviewed and a motion for approval was made by **Dave Watson**, second by **Kamran Derayah**.

3. Short Term Items to Complete

a) Tech Bulletin 17 – Polymer Laminate CSP Guideline

Tech Bulletin 2 revisions were completed and submitted to sub-committee members for review. Randy asked for more time to comment. Ian asked for a copy. Lynn gave a brief introduction of Tee Group and agreed to send the committee technical information as well as related ASTM specification acceptance.

Action: Ray to send Technical Bulletin 2 to Ian for review and comment.

Action: Lynn to send technical information and related ASTM acceptance to Ray for distribution to committee.

b) Bolt & Nut Research Updates

MTQ - Report

The December report was reviewed. Abrasion results showed improvements over 2015 from one to two cycles, however were not to the level of hot dipped galvanize coating at 7 cycles. Armin indicated these results are expected due to the thickness of coatings between the zinc flake Leland bolts and HDG bolts (4- 5 times thicker). There was discussion pertaining to the MTQ internal standard LC21-01 abrasion test and how much weight CSPI should place on it. This standard was also used in testing polymer coated plate. It was agreed that this report will suffice and be used to move forward with seeking 75-year material service life in abrasion 1 levels.

The corrosion results were very impressive. After 4,180 hours of salt spray, the Leland bolts were still showing little loss of surface coating, whereas at 2,050 hours, HDG showed total loss of coating and rusting.

Action: Future – seek 75-year material service life with MTQ – will be reviewed at next TAC meeting on April 7th.

Action: Armin to markup up Table 1 of MTQ report to correct items such as the Leland coating thickness.

Leland Update

Leland indicated testing results are applicable to both silver and black fasteners.

Armin is a member of ASTM F16 Coatings committee. The Zinc Flake coated fasteners are in a combined specification with automotive (A490 & A325). Armin stated that the bolt / fastener industry is moving towards zinc flake coating. The bolts are available in black and silver with both having the same performance. There was a great deal of discussion pertaining to testing protocols and specifications resulting in the following action items:

Action: Leland to provide performance results, thickness of coatings, technical specifications, Kesternich report and the technical overview given to MTO to CSPI.

Technical Bulletin

Kevin issued a technical bulletin for review. There were no comments at this meeting with more time asked for review.

Action: Randy and Leland to provide comment.

3rd Party Review

RFQ request sent to Pete Ault on February 27th. Ray spoke with Pete on Wednesday, March 1st at 3pm. I explained to him that we would be looking for a review of the test results and an opinion on 75-year material service life. He would review the reports from MTQ and Leland and provide an opinion on the technical bulletin. He said it would be about 20 hours at \$185 US per hour, or about \$5,000 per Canadian. He mentioned a potential conflict of interest in that he is working on the NCSPA tests for plate and bolts. He understands that

he needs to keep these two separate, nevertheless the issue is there. I told him I would be in touch after the committee has reviewed this and that if we do go ahead, we would need the quote to be in writing and firmed up.

c) Buried Bridge Presentation – Content, Review & Schedule

Schedule:

Sept 15 th	MTO St. Catharines H.O.	Completed
Oct 11 th	City of Calgary	Completed
Oct 20 th	NS DOT	Completed
Oct 21 st	NB DOT	Completed
Feb 2 nd	MTO Thunder Bay Region	Completed
Feb 8 th	MTQ Quebec City	Completed
Feb 15 th	MTO Regional Bridge Heads	Completed
Mar 14 th	Saskatchewan DOT – Regina	Scheduled
Mar 21 st	Alberta DOT - Edmonton	Meeting only
Mar 22 nd	BC DOT - Kamloops	Meeting only
Mar 28 th	PEI DOT - Charlottetown	Scheduled
Mar 30 th	NF DOT – St. John's	Scheduled
Apr 5 th	Man DOT – Winnipeg	Scheduled
Apr	MTO London	Pending
	MTO Kingston	Pending
	MTO North Bay	Pending
	MTO Downsview	Pending

d) SWM & Buried Bridge Presentation – Content, Review & Schedule

Feb 2 nd	City of Thunder Bay	Completed
Feb 6 th	City of Fredericton	Initial meeting, F/U L & L
Mar 9 th	City of London (Armtec sponsor)	Scheduled
Mar 21 st	City of Edmonton	Scheduled
Apr	Region of Waterloo, ON	Pending
	Kitchener, ON	
	Waterloo, ON	
	Hamilton, ON	
	Ottawa, ON	
	Windsor, ON	
	Oshawa, ON	
	Kingston, ON	
	St. Catharines, ON	
	Toronto, ON	
	Sudbury, ON	
	Vancouver, BC	
	Abbotsford, BC	

Victoria, BC
Halifax, NS
Moncton, NB
Saint John, NB
St. John's, NF
Winnipeg, MB
Regina, SK
Saskatoon, SK
Montreal, PQ
Sherbrooke, PQ
Quebec City, PQ
Trois-Rivières, PQ
Saguenay, PQ

Need to register as a lobbyist
for Quebec municipalities

PPC Committee to decide which municipalities to target in 2017.

4. Long Term Items

a) ASTM A742 Review & Testing – Polymer Laminated Steel

As per the conference call held on April 21st 2016 it was agreed to proceed with the following tests:

- Adhesion in ASTM A742 (mandrel bend);
- Adhesion in ASTM D3359
- Boiling water adhesion test
- Salt spray.

Samples were supplied to Warner. Tests have not been started yet. Deferred to next meeting.

5. Ongoing Items

a) Approval of the Kleskun Hills Report

The Kleskun Hills report was presented at the December meeting. The only question raised was the performance of the gabion baskets. This will be looked at in 2017.

Action: Kevin, Randy, Bruce & Mike to sign off before mid-March. Alberta Transportation meeting has been tentatively scheduled for March 21st.

b) Galvalume Project – NB DOT Meeting Update

Ray presented the research project to NB DOT staff on February 6th. Present at this meeting were six engineering department staff. It was well received and they were positive to working with CSPI, provided an appropriate site can be identified.

Action: Ray to follow up in April.

c) Regional Updates – Certification Programs

Region	CSP Protocol	Structural Plate Protocol	Comments
Newfoundland	Presentation made on August 11 th	Submitted Polymer Plate Spec.	Will follow up with John Morrissey at Buried Bridge presentation in March 2017.
PEI	Spoke with Darrell Evans at TAC in Sept 2015.	Spoke with Darrell Evans at TAC in Sept 2016.	Presentation in March 2017.
Nova Scotia	Presentation made on August 12 th	Changes Specs every 2 years. Download section 12 and send changes in 2 nd Q 2017 to Will Crocker	Reviewed at October 20 th 2016 Buried Bridge Presentation. Changes to be submitted.
New Brunswick	Attempted a number of times through Rob Simpson. Work through Armtec & AIL	Spoke with the ADM Tony Desjardins and was able to set up a bridge presentation.	Reviewed at October 21 st 2016 Buried Bridge Presentation. Follow – up with Tony.
Quebec	Using 2007 with no CSPI reference. Sent Gerard OGPDG.	Spoke with Gerard Desgagne on Sept 12th 2016 and bridge group. Under review.	Bridge presentation held in February 2017.
Ontario	Webinar held with Art Groenveld. St. Catharines visit on January 18 th 2016.	Met with Tony & Ranko on August 4 th 2016 to discuss changes to spec. Under review.	Continue dialogue with Tony Merlo and Magdy Meleka on SP Design Manual in 2017.
Manitoba	Presentation made on Sept 22 nd		Buried Bridge presentation scheduled for April 2017.

Saskatchewan	Presentation on Sept 21 st . Polymer laminated edges – issue?	Height of Cover Tables need updating – download from Website. Met with Howard Yea at TAC in Sept 2016.	Buried Bridge presentation scheduled for March 2017.
Alberta	Presentation on August 4 th and Kleskun Hills visit. Met on December 15th and presented certification. Issues being resolved.	Submitted changes to Section 118 in June 2016. Met with Des Williamson on October 13 th . Under review.	Non-responsive. Ray will continue to push forward.
B.C.	Changes to specification effective January 1, 2017. Both CSP and SPCS require plant certification.	Changes to specification effective January 1, 2017. Both CSP and SPCS require plant certification.	Updated section 320 & 303 and submitted in 2015. Took 1.5 years.

d) ASTM

Jesse Beaver of SGH is working on a “Culvert Inspection Manual”. Jesse is looking at topics to submit for NCHRP funding. CSPI will submit a few ideas:

- Rehabilitation of inverts using half round plate
- Rerolled Ends – elimination
- Testing of Water Tight Joints in the field
- Life cycle assessment comparing plastic, concrete and steel SWM systems
- Fish Baffle Design
- Maximum deformation of pipe out of round

Next meeting is in May 7-9, 2017 in Toronto. Kevin, Randy and Ray will be attending.

e) NCSPA

No Update.

f) TRB

Kevin will advise April date of Sustainable & Resilient Buried Bridges webinar. Kevin will be one of the speakers.

g) CSA – CHBDC

Contacted Ken Phu from CSA with regards to fee / cycle / structure for updating G401. Information as follows:

- Changes can be submitted at any time by committee members. CSA will provide cost estimates per change
- If no changes are submitted, standard is up for review every 5 years. Next publication year is 2019.
- Ken will circulate to the committee in 2017 an announcement that the standard is coming up for review and changes should be submitted for review.
- Committee members get a time period for review and comments, changes, edits, etc. a vote is held with 2/3 requirement to pass.
- Ray will be put forward by Ken for membership (in place of Dave) and for the chair. Committee vote is required.

Action: Ray to follow up with Ken on fees. Who is responsible? ASTM? CHBDC? HDPE?

Lynn asked how Tee Group can get specified in Canada. A change in G401 is required as section 4.5.4.1.3. reads as follows:

Polymer Laminate shall comply with ASTM A742/A742M and be a film coating consisting of at least 85wt% ethylene acrylic acid (EAA) copolymer.

Tee Group's film is specified in ASTM A742 / A742M; however, properties are different from EAA. Tee Group was specified in ASTM in August 2014 and CSA was updated in March 2014.

Action: Lynn to supply the committee with test reports & USA specifications for review before submitting to CSA for inclusion.

h) AREMA

No update.

i) CSCC / AISI

Next CSCC board meeting is scheduled for June 16th in Milton Ontario.

AISI meetings:	Sustainability Council	June 20 th	Washington
	SMDI 2017 project review	June 21 st	
	SMDI 2018 project submission	August 30 th	

6. Discussion / New Business

a) Scholarship Award - papers

Topic has been presented at each University lecture held thus far. There was discussion that the scope of rehabilitation (see MTO list) be directed toward this action.

b) Sustainability (environmental product declaration, recycled content for CSP and structural plate, LEED points for stormwater management systems)

Kamran gave a presentation on the Leed Certification Program. Detail is in the presentation with highlights as follows:

- Maximum amount of points CSP may add to a project is 7 points (culvert plant, steel producer, 51% recycled content in product, 100% recyclable, etc.)
- The value of an environmental product declaration (EPD) was discussed.

Action: Kamran and Kevin to further discuss value and costs of an EPD.

Action: Kamran to present at the June annual meeting in Vancouver.

c) Dave Penny project– elimination of rerolled ends

Deferred to next meeting.

d) Technical Issues / Bulletins

L/T Items to be tabled at a future meeting:

- Polymer coated colour other than black. Requests for gray.
 - Deferred to next meeting
- Relining culverts using half – round plate technology as introduced in Europe.
 - Randy asked for the European technical document for review at the next meeting. **Ray to send.**
- Northern permafrost issue and suggestion that CSPI tackle this - CHBDC committee issue.
 - Deferred to next meeting
- Impact on Polymer Coated Plate from brackish / sea water.
 - Randy to send to Ray maritime site
 - There is a site near the Pacific Ocean in BC, that is on the Site Locator Map
 - Ray will do a test this summer in the St. Lawrence near Quebec City
- MTO issues requiring rehabilitation brought up at latest buried bridge presentation:
 - Flattening of the crown
 - Seam openings – pull apart
 - Haunches buckling – invert rising
 - Crimping of the conduit walls (along the wall haunches)
 - Bolt hole tears
 - Excessive deformation of the conduit especially along the crown and shoulders
 - Water leakage along plate seams and through bolt holes
 - Corrosion and cross section losses (difficult to quantify and repair)

Randy expressed concern given that these issues are site specific and can be caused by external forces / issues that have nothing to do with the material. He stated that MTO have a list and each structure is rated with regards to rehabilitation issue. Nick suggested that CSPI give a high level of solutions available to each area as a start. There was a great deal of discussion on the time required to do a literature review and put out an exhaustive list of solutions. Kevin/Randy agreed utilizing CSPI's scholarship award to fund research on this project is a good idea. Regardless of the cause, concern, or work involved, MTO is a major customer and has reached out to CSPI for help in rehabilitating the issues that have occurred with 20 to 30-year-old structures.

Action: Randy to look at MTO structures and ratings on-line and advise committee of findings.

Action: Ray to go back to Sharif (MTO) and ask him to rank these issues (priority list). Wait for Randy's OK.

Action: Kevin/Randy to discuss with researchers the potential of turning this into a CSPI funded grad student project.

7. Adjourn & Next Meeting

The meeting was adjourned at 12:50pm. Next meeting will be on April 7th.

Secretary
Ray Wilcock