TECHNICAL ADVISORY COMMITTEE
Memorandum of Meeting

1:00 P.M. Monday May 5th, 2017 – Vancouver, BC

Present:

Kevin Williams (Chair)	Atlantic	Byron Nelson	Leland
Bruce Matheson	Frontier	Jason Sherwood	Atlantic
Randy McDonald	Armtec	Shane Setter	Ironside
Kamran Derayeh	ArcelorMittal	Mike Mounts	Valfilm
Phil Carroll	Atlantic	Ray Wilcock	CSPI

Absent:

Nick Spence	Atlantic	Lynn Riley	Tee Group
Lyndsay Dokas	Armtec	Ian Berry	Warner
Dave Watson	Leland	Chris Groot	ES Hubbell

Guests:

Dawn Nigro	Armtec	John Tran	AMD
Heba Ahmed	Armtec	Dave Newbigging	AMD
David Worsley	Atlantic	Robert Rohr	ACI

1. Welcome and Opening Remarks

Kevin Williams opened the meeting at 1:00pm and welcomed everyone. Attendance was taken and is recorded above.

2. Review Minutes from April 7th, 2017

Minutes were reviewed and a motion for approval was made by **Shane Setter,** second by **Kamran Derayeh**.

3. Outstanding Items to Complete

a) Approve Tech Bulletin 2 for polymer coating repairs & post

Kevin asked for approval of the latest draft. The committee approved and all agreed to post on the public website. Ray will share the document with the NCSPA.

b) Bolt & Nut Research

- **MTQ Report update - Product specification**

MTQ has taken the submittal into consideration and will advise in the near future.

CSPI has presented to all ten DOTS'. Members are available to use in corrosive environmental sites as per CSA G 401.

4.4.2.4

Bolts and nuts should be

a) galvanized in accordance with ASTM A153/A153M and ASTM F2329 or CAN/CSA-G164, Class 5; or
b) mechanically galvanized in accordance with ASTM B695, Class 55.

Alternative coatings may be used in more aggressive environments as required by design.

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

- **Technical Bulletin sign off**

Edits were made during the meeting using track changes. The title was changed to "Alternatively Coated Fasteners for Structural Plate CSP". Kevin asked the committee for approval and all were in agreement. Following are the remaining actions:

Action: Ray to format the document, post to the member's website and share with NCSPA. On hold due to discussion below.

Action: Leland to produce Kesternich testing report.

- **Estimated material service life**

Kevin asked the committee about sharing this bulletin with MTO. Randy suggested we wait until a response is received from MTQ. Kevin asked Ray to update the committee on the conversation with Pete Ault. Cost for Pete to conduct a review and express an opinion on the MTQ report would be in the neighbourhood of $5,000 US. Phil expressed concerns about Alberta and BC's abrasion levels which may cause issues with closed bottom structures. Thus, this document is still under open discussion. Issues raised as follows:

- Compare abrasion testing versus seam strength
- Before we post to the website, wait for MTQ to decide or take out the abrasion level out completely

Thus, the following was agreed to:

- **Take out the abrasion level out of the document and wait on the MTQ decision and the NCSPA tests.**
- **Decision on usage of bolts will be on a regional basis.**
- **Change the title to "Enhanced Corrosion Performance Fasteners for SPCS".**

- **Publication?**

On hold for now.

c) Rehabilitation Gap Analysis Literature Review

Ray to set up a meeting with MTO, Kevin & Randy.

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. No update.

Bob suggested he could help Ian out. Ray to coordinate.

b) MTO Design Manual

Action: Ray to obtain some dates from Tony Merlo and coordinate with Randy & Kevin. Try for a Go-To-Meeting versus a visit.

Action: Ray to send copies of design manuals to Kevin and Randy.

c) Galvalume

Site visits are planned to Port Alberni in June and Algonquin Park in August.

Action: Ray to follow up with NB / NFLD for 3rd site.

Action: TAC to reach out to Pete Ault to provide a quote for the development of an environmental capability document for galvalume.

d) SWM/Buried Bridge Action items

Feedback from DOTS and Municipalities:

1) Municipalities do not allow steel in Storm Sewers / SWM within the city
2) Municipalities allow steel in culverts and bridges (Provincial Specs / CHBDC)

3) Obtained city specifications, will review this summer and update Product acceptance list
4) Municipalities knew very little of coatings for durability
5) Many municipalities are open to new technology and have asked CSPI back to present
6) PEI – backfill has to be brought in from NB, thus a bias to concrete structures (analysis required)
7) Many referred to past experiences of CSP rusting at the inverts and having short life
8) Many concerned with proper installation and manufacturing issues (polymer)
9) LEEDS / Environmental Product Declaration not on the radar (Vancouver thinking of it)
10) Alberta - Polymer Plate, hole in the valley being damaged by torqueing of bolts
11) Alberta Trans – drafted specification changes for plant certification and manufacturing outside of Canada clause
12) Alberta asked CSPI to post certified Provinces on our website
13) Alberta would look at request to move Polymer Laminated to approved material list – Kleskun Hills report (follow up with Joe Filice)
14) Edmonton concerned with the ultimate responsibility (Engineer / Designer of record) as nobody wants to take responsibility
15) Sask DOT would like a CSPI guideline on optimal equipment (size of compactors) as job sites as per span / size of project
16) Sask DOT – what material can they use in environments with resistivity < 200 om cm
17) Sask DOT – clarification of CSA G401 on # of bolts per coupler size (300mm / 600mm) and who makes semi corrugated couplers (in CSA G401)
18) MTO – would like copy of MTQ bolt research report
19) MTO – would like a bulletin on pipe rehabilitation covering each issue raised (in ideas for research paper section)
20) MTO – would like CSPI to visit to discuss SP Design Manual
21) MTQ – testing of Polymer Coated plate in tidal / brackish waters (send Gerard the west and east coast sites)
22) MTQ – what type of membrane to be used for bridge water tightness
23) Galvalume test site opportunities discussed in NB or NF
24) MTO Thunder Bay – would like CSPI to visit this summer to visit polymer / aluminized test site with staff and perform water testing / training
25) DOT's are very interested in relining inverts only using polymer coated pipe / plate (Technical Bulletin needed) – Dave suggested to include Fish Baffles
26) Minimum diameter of spiral rib pipe is 450mm – median drains are 300mm
27) Education is the key / Lobbying politicians when regions are biased
28) Full review of the Supplemental Specifications for Municipal Services (DGSSMS) is required
29) Many DOT's looking at updating standards (2018 – 2019)
30) MAN DOT – moving to certification in 2017 / 2018
31) MAN DOT issue – require piles due to soft soil which could compromise cost savings

- 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)

Discussion: See 6A for discussion on call for paper / university association, etc. Kevin asked the committee what CSPI should focus on first. Phil suggested that attention should be paid to Alberta's polymer laminated issue with Joe Filice and the issue of damage in the valley caused by torqueing of bolts. Ray suggested a common theme from a number of DOT's – rehabilitation of inverts using polymer coated plate.

Action: PPC Committee to prioritize the remaining list. Kevin will contact Janine to discuss.

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

e) Technical bulletin on invert reline

Fall item.

f) Tee group film

Lynn Riley has resigned from Tee Group. John Buckner their President has informed CSPI that he will be the contact and will call later on this month for an update and direction going forward.

On hold for now.

g) Colour of Thermopolymer: is testing valid for grey?

Ian was not present at this meeting; however, he can coat using any colour with the same results as black. The issue is one of quantity / cost and member commitment.

h) Thermopolymer plate in brackish/salt water

There are three sites requiring a review (1 in BC, PQ & NS). Ray will attempt to visit during fall travel and will report back once complete.

5. Ongoing Items

a) Kleskun Hills Report

Ray contacted Joe Filice about moving Polymer Laminated material from the trial list to the accepted list. AT will be meeting on July 5th and will make a decision at this time. Next trip will be in August to inspect the site.

b) Galvalume Project – Summer Update

See 4C above. Kamran asked the committee what is required from AMD to move this material forward. Are there tests that AMD need to run or provide results on? It was stated that we need a 3rd party report (Pete Ault?) that could be funded partly by AISI.

c) ASTM

Meeting was held in May in Toronto. Items of interest include the following:

- Both Kevin & Randy received "Award of Appreciation" for their efforts on committees
- Next meetings are in November in Atlanta

d) NCSPA

NCSPA fall meeting will be held in Atlanta following the ASTM meetings. Ray, Kevin & Randy will be attending.

e) TRB

Feedback from the Sustainable & Resilient Buried Bridges webinar was given by Kevin.

f) CSA G401

Contacted Ken Phu from CSA with regards to fee / cycle / structure for updating G401 a second time to confirm fees.

- There are no member fees like ASTM
- Standards are paid for by stakeholders and end users who have a vested interest.
- CHBDC is funded by DOT's across the country.
- HDPE is funded by stakeholders
- CSP – CSPI is the major stakeholder

Randy asked about non CSPI members getting the benefit of updating the standard and not paying their fair share.

Action: Ray to address with CSA.

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. Tee Group needs to look at conducting a salt spray test which has great importance in Canada.

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

Action: For the next TAC meeting (Sept), all members to provide their changes in advance so that Ray can submit to Ken (CSA) for a quote.

g) AREMA

No update.

h) CSCC (Canadian Steel Construction Council)

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

i) AISI Project list to be reviewed

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

2017 Projects

1.	Polymer Laminated Steel	10,000
2.	CSA Certification Programs	10,000
3.	Bolt Research & Testing	5,000
4.	University Outreach Program	5,000
5.	Galvalume Project	5,000
6.	Floodnet	1,000
7.	Environmental product declaration	3,000
Total Approved Projects		**$39,000**

2018 Projects for review

1.	Polymer Laminated Steel	10,000
2.	CSA Certification Programs	10,000
3.	University Outreach Program	5,000
4.	Galvalume Projects in 3 Provinces	5,000
5.	Floodnet	1,000
6.	Environmental product declaration	5,000
7.	Life cycle comparison	5,000
8.	CSA G401 rewrite for 2019	5,000
9.	Rehabilitation Technical Bulletin	5,000
Total Thus Far		**$51,000**

The “Life Cycle Comparison” was discussed and considered a high priority item. Phil agreed to help with the wording. In order to define the scope, it was agreed to hold a Go-To-Meeting in July. Participants will be Ray, Phil, Jason, Heba, Bruce, Kamran & Randy.

j) OPS Height of Cover Tables

Kevin mentioned that OPS is attempting to standardize height of cover tables for all materials and standardize a common design method. He has been asked to comment as well as CSPI.

6. Discussion / New Business

a) Technical Issues / Bulletins

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

- Polymer coated colour other than black. Requests for gray.
  - Mike indicated that Valfilm can produce Grey.

- 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 sent Ray maritime site
  - There is a site near the Pacific Ocean in BC, that is on the Site Locater Map
  - Ray will do a test this summer in the St. Lawrence near Quebec City

7. Adjourn & Next Meeting

The meeting was adjourned at **3:00pm**. Next meeting will be at the call of the Chair.

Secretary
Ray Wilcock