



TECHNICAL ADVISORY COMMITTEE Memorandum of Meeting

10:00 A.M. Friday May 25th, 2018 – Cambridge, Ontario

Present:

Kevin Williams (Chair)	Atlantic	Ian Berry	Warner
Nick Spence	Atlantic	Dave Watson	Leland
Heba Ahmed	Armtec	Mike Mounts	Valfilm
Kamran Derayeh	ArcelorMittal	Ray Wilcock	CSPI
Byron Nelson	Leland		

Absent:

Jason Sherwood	Atlantic	Randy McDonald	Armtec
Riley Wilson	Atlantic	Jim Evans	AK Steel
Phil Carroll	Atlantic	Bruce Matheson	Frontier
Shane Setter	Ironside	Marc Warden	Hubbell

1. Welcome and Opening Remarks

Kevin Williams opened the meeting at 10:00 a.m. and welcomed everyone. Attendance was taken and is recorded above. Go-to-meeting was used.

2. Review Minutes from February 28th, 2018

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

3. Outstanding Items to Complete

a) Bolt & Nut Research

MTQ acceptance request update

1. Ray: Spoke with Gerard Desgagne in Ottawa at the SSC TAC meeting. He stated that he will meet with his staff later this year to discuss the proposal.
 - Will continue to follow up with MTQ throughout the year
 - Update the committee on the June 5th NCSPA meeting (Bolt testing)

b) Rehabilitation Gap Analysis Literature Review

MTO issues requiring rehabilitation brought up at the 2017 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)

1. Kevin: a student has been identified at Queen's University.

- Provide information to Queen's (financial statements and proof of CSPI being a non-profit organization)

c) MTO – Structural Plate Standards Advancement

1. Package was submitted digitally to Tony Merlo and Magdy Meleka on February 22nd. Spoke with Tony Merlo in April at the SSC TAC meeting in Ottawa. He stated that Magdy & he will review our request this year.

- Will continue to follow up throughout the year

d) Municipalities Submission:

1. Application and supporting documents were put together to target 10 municipalities. Thus far, St. John's and Halifax have been submitted. Plan is to submit the other eight in June / July
2. Kamran: Leed information is correct and can be added to tech bulletin on recycled content

- Ray to update CSPI tech bulletin on recycled content to incorporate LEED information.

e) Galvalume – report from Pete Ault

3rd draft from Pete Ault was received

1. Kamran: in all cases the chemistry ratings are greater than AL2, however in the line charts, Pete has given 1.2 times galvanized service life. Would like to see the ratings in the bar charts, however not in the line charts which are very confusing.
2. Heba: on page 6, the test results for hardness are confusing. Pete states that after 260 days, a little rust is evident in both samples, and yet AL2 shows more rust than galvalume, then why the conservative estimate.

3. Kevin: would like to know what is involved in the electrochemical testing.

Response to Pete is as follows:

1. Line Charts - Figures seem conservative based on environmental limits which are the same or better than AL2. In the line charts, you have given 1.2 times Galvanized service life, however in the bar charts, Galvalume shows the same or better than AL2. Should the line charts not show at a minimum the same as AL2? Please define if it is possible to get figures the same as AL2 or not?
2. Top of Page 6 Hardness - There is confusion in this area and may be misleading. You state the following: After 24 wetting cycles spanning 260 days, a similar amount of rust specks and staining were observed on the Galvalume and galvanized samples. Aluminized Type 2 exhibited slightly more rust speck than the other two materials. Based on this data and the performance observed in high chloride water (discussed below), the acceptable hardness range for 55Al-Zn can be same as for Aluminized Type 2 steel. I understand the conservative estimate; however, it may be interpreted incorrectly. Could you please change the wording to make it clearer?
3. Electrochemical Testing - Please outline the laboratory test you have in mind? Is there a specific test or standard we should be following?
4. Site inspections – In your opinion, will the “PosiTector” thickness gauge readings equal coupon testing?

f) OPSD Height of Cover Tables – revisions required

Detailed double-stamped calculations for Round CSP 805.010, CSP Pipe Arch 805.020, Spiral Rib Round Pipe 805.030 & Spiral Rib Pipe Arch 805.040 are required.

1. Kevin: AIL will respond by Monday the 28th with 010 & 020.
 2. Heba: Armtec will respond by Tuesday the 29th with 030 & 040.
- Send to OPSD by required date of Wednesday, May 30th.

g) Sustainability (EPD)

1. Ray: gave an update on the overall project. There are two outstanding items related to steel making that Stan Lipkowski (AMD) will respond before May 31st. Expect to receive final certified EPD in the first week of June.
 2. Kamran: stated that Stan will be attending the annual meeting in June and will be available to present the EPD to the committee.
- Stan to present the EPD at the annual meeting at a time to be agreed upon.

h) NCSPA Polymer Coated Plate & Bolt Testing

1. Ian: abrasion test is suspect and gives cause for concern
2. Mike: stated that the ASTM ballot is ready to go for the June 20th deadline. Mike will send the ballot to Ray for distribution.
3. Kevin: concerned that they may not have taken into consideration the committee comments – will see when the ballot is distributed

➤ Ray: will follow up after attending the June 5th NCSPA TAC meeting via phone

4. Long Term Items

a) ASTM A742 Review & Testing

Mike: gave an update on latest discussion from the NCSPA sub-committee. The specification is up for review (every 5 years). It was decided to proceed with minor modifications, such as test methods that are no longer active, wording, references, etc. to move this specification out of the 5-year review. In the longer term, the more detailed topics and major modifications (salt spray testing, e.g.) will be tackled.

b) Storm / Buried Bridge Action items – update

Feedback from DOTS and Municipalities:

The five items as voted on by the committee at the December meeting were:

1. Municipalities – focus on standards for storm sewers and culverts
2. Education on durability / coatings available
3. Education on proper installation and manufacturing of polymer
4. Analysis for PEI DOT – bringing backfill in from N.B. (plate versus concrete envelopes)
5. a) Full review of the of the DGSSMS
b) Technical bulletin on alternatives to granular backfill

Update from Ray:

NF DOT – submitted changes to their storm sewer, culvert and bridge standards to include polymer laminated CSP and polymer coated SP. John Morrissey sent a note saying they received and will be in touch this year.

Sask DOT – submitted comments to a new standard calling for culvert stiffener specification.

BC MOT / University of BC – met with both parties and both were positive on the LCC analysis on buried bridges versus traditional bridges on the Coquihalla highway. Follow up meetings to be set up in August / September time frame.

Road Authority in Ontario – CSPI is now a member and will be able to submit product applications to Municipalities in Ontario.

c) Thermopolymer plate in brackish/salt water - Ray

There are three sites requiring a review (1 in BC, PQ & NS). MTQ are extremely interested in these sites as this is their number one concern.

- Ray will visit during 2018 summer and fall travel and will report back by the end of the year.

d) Technical Bulletin on Invert Reline - Ray

- Ray to draft a technical bulletin using the article from Sweden in 2018 by 3rd Q, to be reviewed at a future TAC meeting.

e) Winter Storage Technical Bulletin

Phil sent a draft in April. Ray to make comments and will then circulate to committee prior to the June meeting for review. Target September release.

f) Bolt & Nut Research

Estimated material service life (Pete Ault quote)

Higher abrasion resistant coatings (Leland lead)

1. Byron: the new resistant coatings are being worked on – hope to be ready by the 3rd Q. Zinc flake coatings are in ASTM A325 and Leland is current working towards a ballot within 6 months to have them included in A490. Asked if CSPI will endorse NZF 3000 over mechanical galvanized bolts as NZF have tested superior in both corrosion and abrasion.
 2. Dave: stated that by once the bolts are in A490, they will be covered in A449 – culvert bolts.
 3. Ray: stated that despite NZF being superior than mechanical galvanized bolts, the latter is in CSA G401, Section 4.4.2.4. Suggested that in parallel with ASTM submission, work towards CSA specification that is up for review and publication in 2019.
- Kevin: directed CSPI to work with Leland to include NZF3000 for CSA G401 inclusion.

5. Ongoing Items

a) Kleskun Hills 5 Year Project

August 10th 2017 report approved and submitted to Alberta Transportation

➤ [Next site visit in August 2018](#)

b) ASTM

Mike gave an update above on A742. No other updates were reported.

c) NCSPA

Mike: the #1 issue with TAC is the NTPEP (plant certification) that is being driven by ASSHTO. The cost per plant certification is a frustration and concern for members. Ongoing discussion is taking place with no resolution in sight.

d) TRB

Kevin: no update

e) CSA G401

CSA G401 Revisions List thus far:

5.1.3 Helical Lockseam CSP – for 1.1 change the diameter to a range (100mm – 3600mm) and tables 10 and 11 to standard sizes.

5.1.3.8 Welding of Coil Ends – wording required to address the reference to CSA W59 and its reference to CSA W47.1 certification requirement.

6.1 Quality of Work – (f) refers to defective welds (as defined in CSA W59) – thus the reference back to butt welds. We need to define certified welding between CSP & SPCS.

6.2.1 Repair of damaged metallic coating – references CAN/CGSB-1.181 which was withdrawn in October 2011. The equivalent standard is ASTM A760 which references A780 for repair.

Table 1 Chemical Composition of Steel – exceeds AASHTO M218 total composition cannot exceed 0.70. S/B updated for compliance.

Table 18 Minimum Coupler Dimensions – breakout corrugated and semi-corrugated couplers (very confusing). Semi corrugated 600mm couplers – does anyone manufacture this in Canada? In addition, identify that 600mm diameter refers to 5 bolts (can be interpreted incorrectly).

Other:

1. AASHTO M218 lists mechanical requirements of coil prior to fabrication
 - Tensile – 310 MPa minimum
 - Yield – 230 MPa minimum
 - Elongation in 50mm – 20% minimumG401 does not have a mechanical properties requirement for CSP material.
 2. Welded lockseams for the North – permafrost
 3. Markings – on both sides / logos versus names?
 4. Polymer Laminated Repair – Denso 35?
 5. Bolts – include NZF3000
- Ray to mock up standard and send to committee for review – 3rd Q 2018
- Submit to CSA for costing & review

f) AREMA

In future, reach out to Joel Hahm (Big R Bridge) for updates.

g) CSCC (Canadian Steel Construction Council)

Ray: no update

h) AISI 2018 Projects Approved

1. Polymer Laminated Steel	10,000
2. CSA Certification Programs	10,000
3. University Outreach Program	5,000
4. Galvalume Project	5,000
5. Floodnet	1,000
6. Environmental product declaration	5,000
7. Life cycle comparison	3,000

Total **\$39,000**

- Ray to present 2017/2018 results on June 20th in Washington
- Ray to present requests for 2019 funding on August 30th in Washington. Committee members to submit ideas.

6. Discussion / New Business

Calculators on the website:

1. Ray: the resistivity calculator is giving out conservative results versus laboratory testing. This may lead to an incorrect decision with regards to material selection. Although a tool for guidance, it can be used verbatim. Manning's flow and culvert length are other calculators available for upload.
2. Nick: recommended taking the resistivity calculator off the site or adding disclaimers for all tools. Suggestions included adding links to tech bulletins/white papers/handbook etc. and reference all calculators to validate their authenticity.

➤ Nick & Ray will work together on this area and address by the 3rd Q.

7. Adjourn & Next Meeting

The meeting was adjourned at **11:40am**. Next meeting will be on June 11th at Mont-Tremblant, Quebec.

Secretary
Ray Wilcock