

**CORRUGATED STEEL PIPE INSTITUTE
TECHNICAL ADVISORY COMMITTEE
Memorandum of Meeting**

10:00 A.M. Tuesday June 24, 2014 – CSPI, Cambridge

Present:	Kevin Williams – Chair	Atlantic Industries Ltd
	Randy McDonald, Lyndsay Dokas	Armtec
	Kamran Derayeh	ArcelorMittal
	Ian Berry	Warner Custom Coating
	Shane Setter	Ironside
	Dave Penny	CSPI
	Ray Wilcock	CSPI
Absent:	Bruce Matheson	Frontier Construction Products
	Mike Mounts	DOW

1. Welcome and Opening Remarks

Kevin Williams opened the meeting and had all attendees introduce themselves.

2. Review Minutes from May 21st, 2014

Minutes were reviewed and a motion for approval was made by Ian, second by Kevin.

3. Update from Calgary – PPC activities (Ray)

Ray updated the committee on the PPC minutes taken at the meeting in Calgary.

4. MTO Structures Task Force

1) Bolts & Bolted Seams

Byron Nelson from Leland attended the Calgary meetings and made a similar presentation to the PPC and Executive as to what he presented to the TAC committee last month. Kevin stated that we have received samples (HDG, JS 1000, DT 2000, DT 1500, and Black) from Leland; however we have yet to lay out the requirements going forward for testing. Kevin has reached out to AIL suppliers for samples. Two have agreed to provide bolts for testing.

Discussion on how to proceed and what should be provided for testing involved all members. It was agreed that Dave will provide Ray with a plate protocol to form the basis of putting together the bolt protocol. Members will supply the bolted sample 3mm plates, 4" by 6". Dave will contact Donald Villeneuve to determine if MTQ can test corrugated versus flat plates. Randy would like to test the TLP 5/8" & 7/8" bolts. He will send samples to Leland. Ian suggested that before we proceed to MTQ, Warner could do initial tests on salt spray (1,000 hrs) to eliminate those bolts that don't pass. Only, then we would we move forward with MTQ for abrasion testing. Dave stated that he will send the Leland report to Ian.

Dave stated that apparently Canada Culvert has proceeded with the black bolts, despite incomplete testing.

The objective with MTO is to establish a testing program for comparative testing of various bolts and that hot dip and mechanically galvanized fasteners will be used as the benchmark.

Action: Dave to provide Ray with plate testing protocol.

Action: Dave will contact MTQ if they can test corrugated bolted plates. Once known, members will supply samples to Ian for testing salt spray.

Action: Randy to supply TLP bolts to Leland for testing.

Action: Kevin to supply alternative coated bolts being proposed for testing.

Action: Dave to send Leland report to Ian.

Action: Ray will visit MTQ in July to provide update and discuss process going forward.

2) Water Resistant Membranes

Randy visited three sites in NFLD. All three installations used a polyethylene membrane with one site containing a seam sealant tape. One site was 11 years old and the other two were 5 years old. The 11 year old site displayed leakage. Of the 5 year old sites one

displayed leakage and the other with the seam sealant tape did not. The gauge of the material was not known or evident during the inspection.

AIL personnel visited a site in NFLD that was 15 years old and contained a polyethylene membrane. Rust was apparent and Kevin stated that he was not confident with the product.

Discussion involved having a minimum thickness of the poly sheet. Dave suggested that we specify polymer coated plate with polymer coated bolts and seam sealant tape. Ray suggested we offer MTO a generic spec as to what is in the Ohio DOT spec. Randy suggested that we offer the generic spec of polyethylene membranes protected by a non-woven geotextile. Kevin suggested that we have a minimum thickness of 30 mil geomembrane. Kevin offered up the FHWA standard. Randy agreed that this was a good generic spec. Randy questioned the height of cover over a structure and should there be a recommendation with regards to minimum before a water membrane should be used? He also brought up shear plane with regards to low height of cover. Randy suggested that we offer up three solutions as follows:

- 1) FHWA standard – membrane protected leakage and corrosion from road salts
- 2) Polymer coated plate and long life black bolts for corrosion
- 3) Seam sealant tape for water leakage

Action: Kevin to send Ray the FHWA standard. We will look at adding length to the Ohio DOT spec.

Action: Randy / Kevin to provide a drawing on the NFLD project.

Action: Kevin to follow up with shear plane issue.

Action: Randy to send Ray the spec on seam sealant tape.

Action: Kevin to provide the drawing detail for the membrane.

Action: Ray to go back to MTO and give an update.

3) Certification of Structural Steel Plate Plants

Ray reported that CWB has revised their quote by removing the clause referring to “estimated time and could change due to actual hours incurred”. Their price of \$3,800 remained the same. BNQ responded by asking where they needed to be to be competitive. As MTQ does not require certification of structural plate plants, it was agreed by the committee to proceed and issue a P.O. to CWB to update the CSA protocol.

Action: Ray to issue P.O. to CWB.

* If this becomes a requirement at MTQ in the future, then we will have to revisit BNQ updating their protocol.

5. NFLD Update & Outcomes

Kevin asked to defer this item until we have dealt with the MTO Structural Committee.

Action: In future, Dave, Ray, Kevin and Randy to meet and agree on what to propose to NFLD DOT.

6. Polymer Laminated & Repair Training

Dave and Ray met with Alberta Trans at the beginning of June. Also attending was Bruce Matheson, Phil Carroll, Ron Prychitko and a few of Joe's staff. The test at Kleskin Hills has been set up for August 11th. Dave is preparing the write-up for Joe Filice. Bruce, Mike Mounts and Joe will attend. A variety of repair methods will be applied including Denso Butyl 35 Tape (4" & 6"), POR-PATCH, Polyarmour G17, Ranbar, dry galvanized paint, paint & tape, leaving blank, etc. Dave will document once complete. Protocol is to go back in a year and document.

Outstanding from a prior meeting:

A number of issues have been identified with respect to handling and repairing polymer laminated pipes. M. Mounts pointed out that an issue related to damage at the sharp bends on SRP is being addressed with the introduction of rounder profile. We need to develop a Training Guideline for Fabricators. **Shane** agreed to put a **DRAFT** together for TAC review. **Bruce** agreed to prepare a **DRAFT** for TAC review.

Expectation is that the protocol will cover both Trenchcoat and Polymer Coating.

7. Green Handbook Chapter 6

Ray contacted MTQ and received clarification as to their issues. They all have to do with Chapter 11, Tunnel Liner Plate. They have been addressed to Randy.

Action: Randy to advise Ray who in turn will confer with MTQ.

Kevin deferred Chapter 6 rewrite to the fall.

Action: Armtec & Atlantic to compare calculations & agree. Randy & Kevin to develop a plan to update height of cover tables (Pg 249). It was agreed that tables be based upon CHBDC with no corrosion loss.

8. Transportation Research Board

Nothing new to report.

9. ASTM Update

Kevin mentioned there is one ballot pertaining to 4 flange plate as per CSA G401-14.

There were some negatives on the ballot which are being dealt with. Another re-ballot will be coming out in June. No action as of yet. Kevin mentioned that there is an ASTM test for concrete abrasion.

Action: Ian to look at the feasibility of ASTM testing on the bolts. ASTM meeting will be in New Orleans in November.

10. Discussion / New Business

1) The fall meeting switch from Toronto to New Orleans has been approved by the Executive. **Dates will be sent out by Ray.**

2) Ray to update the website in July pertaining to the changes to CSA G401 through “In the Trenches” and advise members when completed.

3) AREMA (American Railroad Engineers) – Cost to join is under \$200. **Ray will review committee notes from NCSA and determine if membership is justified.**

4) Water Testing Kits - Dave and Ray conducted a webinar for Armtec in June. Water kits are now available for \$100. We are on our 2nd batch of 10.

5) Ray presented to Nova Scotia Transportation (Structures Group) and MOE in June. This was very well received with interest in water testing and polymer coated products.

6) Pipe Arches – CSA G401 and OPS 1801 – just an update as to markings required in OPS for certified pipe. Also in CSA G401, the dimensions of rise and span are shown, however not radii. Tables 14 and 15. These match the sizes in the Green Handbook Table 2.9. OPSD 805-020 Nov 2009 shows pipe arch dimensions the same as CSA G401. The drawing shows internal radii but no dimensions are given. These figures were provided to OPS by CSPI in 2004. Depending on the type of arching equipment used slightly different dimensions of pipe arch may be supplied by each fabricator. If the pipe must be inspected it is possible that much of the pipe-arch will not meet spec.

7) Nunavut addressed a concern to one of the members regarding iced pipes. They have a number of ideas to address these using hanging pipes with risers where they pump steam

through, etc. They would like to have a pipe that comes pre-loaded. This will be written up in ITT.

All members wished Dave well for his up and coming trip. Randy and Lindsay brought a cake that was iced with a picture of the Green Handbook.

11. Adjournment & Next Meeting

The meeting was adjourned at 12:40 pm. Next TAC meeting scheduled for September (date to be determined).

Secretary
Ray Wilcock