The following presentation will be delivered on Friday, August 25th at 8:45 am. Please feel free to read throug the presentation in advance in preparation for what we hope is an in depth question and answer period. The documents include a summary of the BCICA Quality Assurance Program, some responsibilities of participants, sample project registration form, a sample pre-project meeting report and some excerpts from an actual QAC inspection report from a current project on file with BCICA. The purpose is to give more insight on how the program works and create a dialogue as to whether there is an interest for TIAC to take the lead on such a program across Canada.

BCICA Quality Assurace Certificate Program (QACP)

Program consists of three components:
- Properly trained independent 3rd party inspectors
- Clear and concise specifications
- Association bylaws that clearly defines enforcement of the program

INSPECTORS

BCICA created an insulation inspector training course through BCIT consisting of four modules
- Introduction to mechanical insulation (online course, six modules, one per week)
- Specifications and product performance (online course, six modules, one per week)
- Technical writing course (online course, eight modules, one per week)
- Inspection practicum (requires one day on site and final exam)
- Once inspector passes BCIT courses they must successfully complete a one day course at BCICA
- BCICA board has final approval over the designation of inspectors

SPECIFICATIONS

BCICA has maintained a best practices guide since the 1950's. These guidelines have been used by the majority of Engineering firms in BC and is regularly updated by BCICA technical committee
The TIAC Best Practices Guide can be used in juristictions where no Provincial specification standards are available.

BYLAWS

BCICA recrafted their constitution and bylaws to ensure the QAC requirements were met.
- Created more detailed membership and application criteria (WCB, financials, ticketed workers)
- Require contractors to post a bond to the Association
- Detailed review/appeal process for QAC violations
- Code of conduct provisions
- Associations looking to use the program would have to update bylaws similar to BCICA, including bonding requirements
- Existing members can be grandfathered from new membership requirements but must carry bonding
- Contractors working QAC projects must have at least ONE ticketed journeyman on site at all times

VALUE TO THE OWNER/OWNERS' REPRESENTATIVE

- Engineer liability gets spread to the inspectors who carry $2.0M liability coverage
- Properly trained inspectors ensure the work is being done to specification
- Ensures that only approved products are being installed by trained workers
- Ensures that all contractors are bidding to the full scope of the project
- Ensures that all materials meet industry, performance based standards
- Allows engineer to allocate their resources in other areas

VALUE TO THE TIAC MEMBER

- All bidders know competitors must allow for the full scope of work in the specification
- Only TIAC member contractors can perform the work
- Properly trained inspectors see the scope of work the same way the contractors do
- Engineers get detailed reports of site conditions negatively impacting the insulation work
- Installation issues are immediately brought to the contractors attention for quick remedy

HOW THE QAC WORKS

- Owner or owner representative (Engineering firm) specifies the project as a QAC job.
- Only a TIAC contractor can provide a QAC
- Insulation contractors include the cost of inspection in their tender
- Cost of inspection is on a sliding scale based on contract value
- The successful bidder registers the project with BCICA
- BCICA creates a project file and assigns an inspector
- Insulation contractor is invoiced for the inspection by BCICA
- Inspector contacts the successful contractor to arrange a project review meeting
- Contractor notifies the inspector once the project starts and schedules the first inspection
- Number of inspections will vary based on the value and/or complexity of the project
- Inspection reports are sent to the BCICA office, the insulation contractor, mechanical contractor and the engineer
- Inspector works with the contractor representative to schedule further inspections as required
- Once all work is completed as specified and a final inspection report submitted, a QAC is sent to the owner by BCICA
- BCICA pays the insulation inspector

BCICA Quality Assurace Certificate Program (QACP)

TRAINING INSPECTORS

Associations would have to recruit potential inspectors. BCICA has advertised through ASTTBC to recruit inspectors. Local 118 has expressed an interest in having ex-insulators take the training but it must be noted that if an insulator wants to become an inspector they MUST stop working on the tools. For the inspector to be an independent third party they should leave their job in the industry to become an inspector. Same applies for anyone working within the industry, whether manufacturer rep or distributor employee. This is an excellent opportunity for a person already doing inspections to add another revenue stream to their business. Roofing inspectors and home inspectors are examples of professional inspectors that may look to expand into the insulation field. Having someone with any professional training on inspections is an asset.

Three of the training courses are online and all course materials would be provided by BCIT to all students. The practicum requires a series of workstations created that sample a number of different applications in the field. Hot pipe, cold pipe, indoors, outdoors, duct work and equipment are some of the stations that need to be built. Local 118 had one of their apprenticeship classes insulate the mock ups, most of which were provided by the plumbing class. I am sure we can get other trade schools involved with building the mock ups and allowing access to a class of inspectors for about 4 hours on one day. Each station has a specification attached indicating the type of application, materials to use and finishes to apply. The student reads the spec. and notes any deficiencies. Once all the stations have been inspected this phase of the practicum is over. From there the student takes their notes and pictures home and prepares a report. The report is graded on the accuracy of the inspection and the quality of the report. If the student passed the four courses they then have to apply to BCICA for designation. They are put through a one day class and if they pass that their application is presented to the board for approval. If approved the inspector becomes designated by BCICA and is available to be assigned projects.

PROMOTING THE QAC

Associations would have to take the lead in promoting the QAC to engineers and end users. BCICA has conducted a number of lunch and learns with prominent engineering firms in BC promoting the program. We feel that is the best way to get the program into the market. The goal is to have the engineering firm write the QAC into their master specification. We have been successful in getting two firms in BC to do that and we have other firms that have used the program on specific projects. We fully expect to have other firms add the QAC into their master specification. BCICA can assist TIAC in creating marketing materials and presentations but the onus is on Associations to make the appointments and do the presentations. However, if firms like Stantec put the QAC in their spec it would be easy to add other Provinces if the contractors are organized.

ADMINISTERING THE QAC

The details of administration are still being worked out between BCICA and TIAC. What we can say is the bulk of the administration will be done by BCICA. In order to ensure the integrity of the program is always consistent, BCICA will take the lead role in administration. We don't see much of a future burden placed on the TIAC office or any of the Provincial Association offices.

CONTRACTOR RESPONSIBILITY

The success of the program is entirely dependent on getting buy-in from the contractors. This must be viewed as a mechanism to raise the bar when it comes to the quality of work being performed, as well as ensure that our trade doesn't lose out on scope of work by self performing contractors. When an engineer specifies the QAC only TIAC members can perform the work. However, keep in mind that all work is going to be scrutinized and held to the highest standards. If the work isn't done right you will be required to fix it. If the work isn't corrected your bond could be called and another contractor brought in to fix whatever needs fixing. There are a number of processes and appeals that take place before a bond would ever be pulled but that leaverage is what makes the program work from an administration side. The engineers like it because it takes the burden off them but shows there is a financial incentive to get the work done properly.

QACF1 JOB ASSIGNMENT REQUEST QACP

QACP Job No. (to be designated by BCICA) ☐

NEW INSTALLATION ☐

RETRO-FIT INSTALLATION ☐

Active Member's Name	
Job Name	
Job Address	
Owners Name	
Address	
City	
Mechanical Contractor	
Design Authority	
Details of Installation:	

Material Mfr. _____ Job Bid Date _____

Job Starting Date

Contract Price $ (Exc. GST) _____ _____

IMPORTANT NOTE:

Member must complete this form properly, and fully comply with the QAC Program requirements before any QAC can be issued. **Incomplete forms may delay issuance of the QAC.**

Member must deliver to the Association with this request all specifications including all change orders.

Member shall execute this job to meet the Association QAC Standards in effect on the date of the Association acceptance shown below.

Written acceptance of this request by the Association is approval of the Member for a Quality Assurance Certificate on this job subject to all Association requirements being satisfied before issuance of any QAC.

Member warrants and confirms to the Association that the Member is bound by this QAC Request and the Association Active Member's QAC Program Commitment.

PAID BY

TICK ONE BOX

[x] MEMBER pays to the Association inspection fees and QAC Administration Fee and the Association pays Inspector (Member's bid INCLUDES Administration Fee and inspection fees)

OR

[ ] MEMBER pays QAC Administration Fee ONLY to the Association AND In exceptional circumstances (must be pre-approved by the Association) MEMBER pays Inspector directly (MEMBER'S bid INCLUDES Administration Fee and inspection fees)

ASSIGNED BY

TICK ONE BOX

[x] Inspector is to be assigned by the Association

OR

[ ] Inspector is requested by OWNER or DESIGN AUTHORITY (must be verifiable upon request) and assigned by the Association

Inspector Assigned

Special Comments

Members Request Date

Members Signature

Association Acceptance Date

Association Signature

Member to complete and forward by fax or approved electronic document transfer (email acceptable) to the Association Office. The Association will return confirmation copies to Inspector and to Member.

QACF1-A PRE-PROJECT REPORT BCICA Job No._____

Inspection Firm _____ Inspection Firm Job No. _____

Project_____ **Site Address**_____

Mechanical Insulation Contractor (Active Member) _____

Date _____ Mechanical or other Contractor _____

Design Authority _____

New Installation ☐ Retrofit ☐

PRODUCTS / MATERIALS (refer to Specifications / Quality Standards Manual for List – INCLUDE MANUFACTURERS NAME)

_____

_____

_____

_____

APPLICATION (refer to Spceifications / Scope of Work)

_____

_____

_____

_____

_____

_____

_____

Pre-Start Job Meeting: Yes ☐ No ☐

General Comments / Observations (scope of work, timelines, concerns, solutions)

_____

_____

_____

_____

_____

_____

Report Received:

MECHANICAL INSULATION REPRESENTATIVE_____Signed: _____

INSPECTOR: _____Signed: _____

INSPECTOR forwards copies to: BCICA (3cc) – CLIENT / MECHANICAL CONTRACTOR / Engineering Consultant – ACTIVE MEMBER

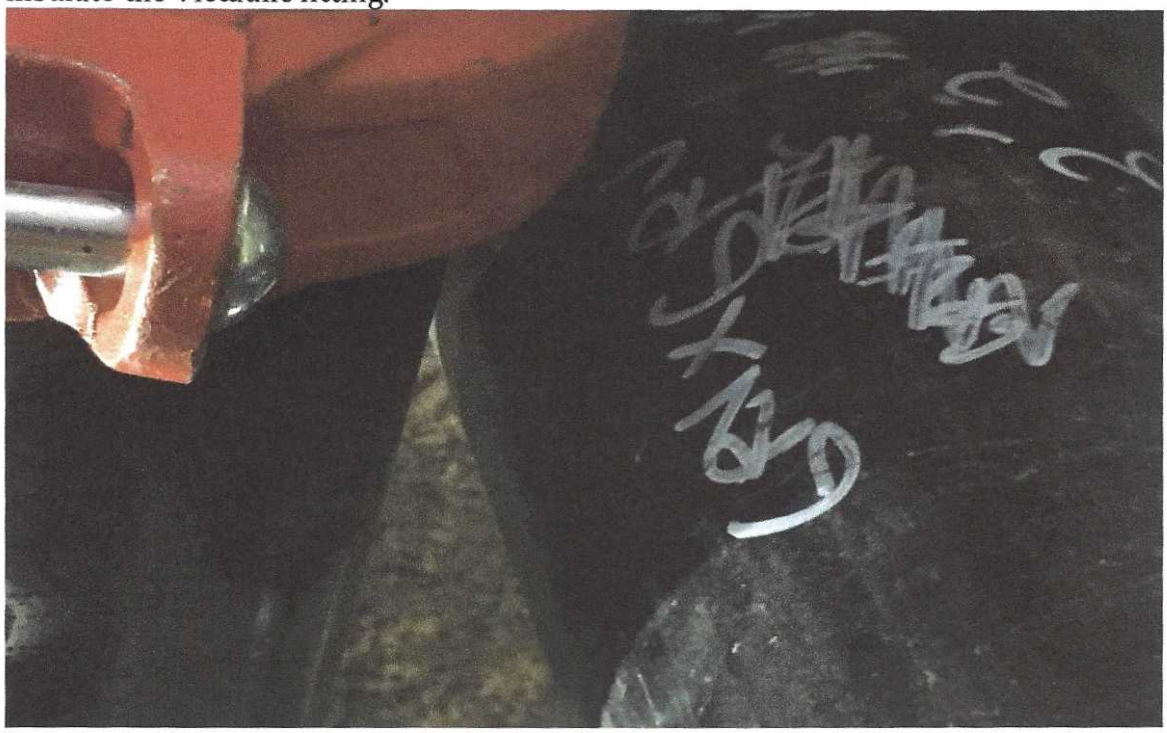
Prior to starting the inspection we reviewed some outstanding issues from previous inspections as noted below:

- Level 6; Insulated pipe support follow up. ------ sent me the approval received from --------- for these supports. Upon review of the information, ---------- cautioned that the use of these fittings can only be used in areas where a 25/50 rating is not required by VBBL 2007. An audit will need to be performed to see where these fittings have been installed to determine whether they have been installed in the proper location. I advised ------ that on my next site inspection I will want to see where these fittings have been used.
- Damaged ASJ on 8" RWL has been repaired.
- Douglas Tower, 6th Floor; Chilled water vapour barrier compromised by split ring hangers has not been repaired.

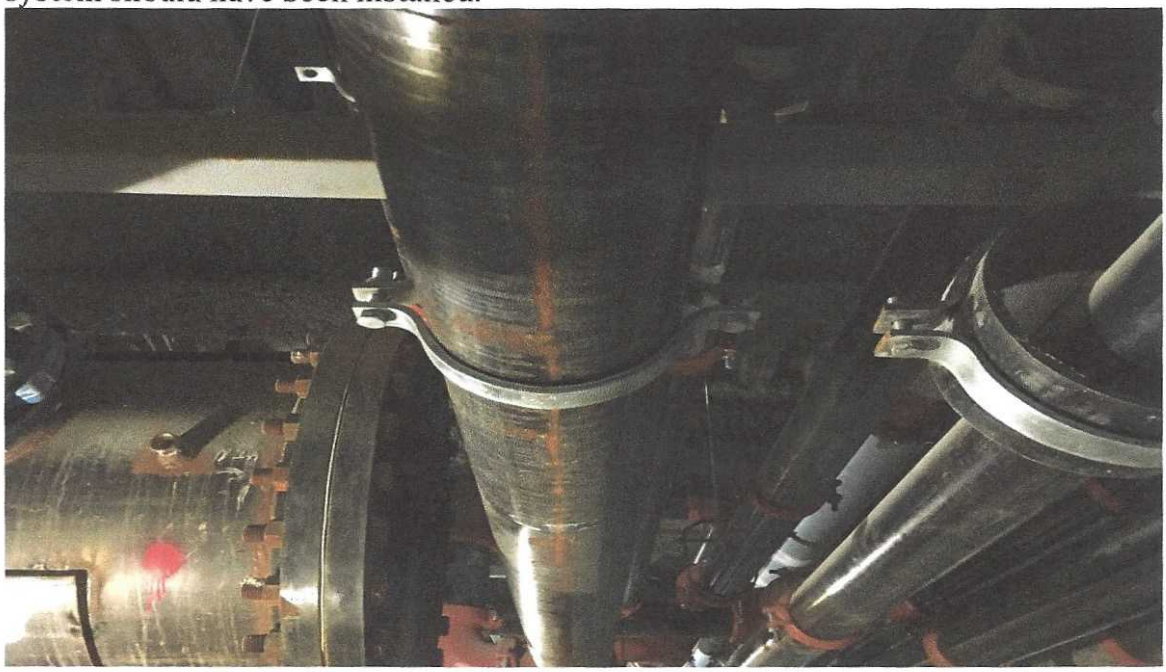
Level 5 – West Side

Pictures #6: ASJ tears need to be repaired.

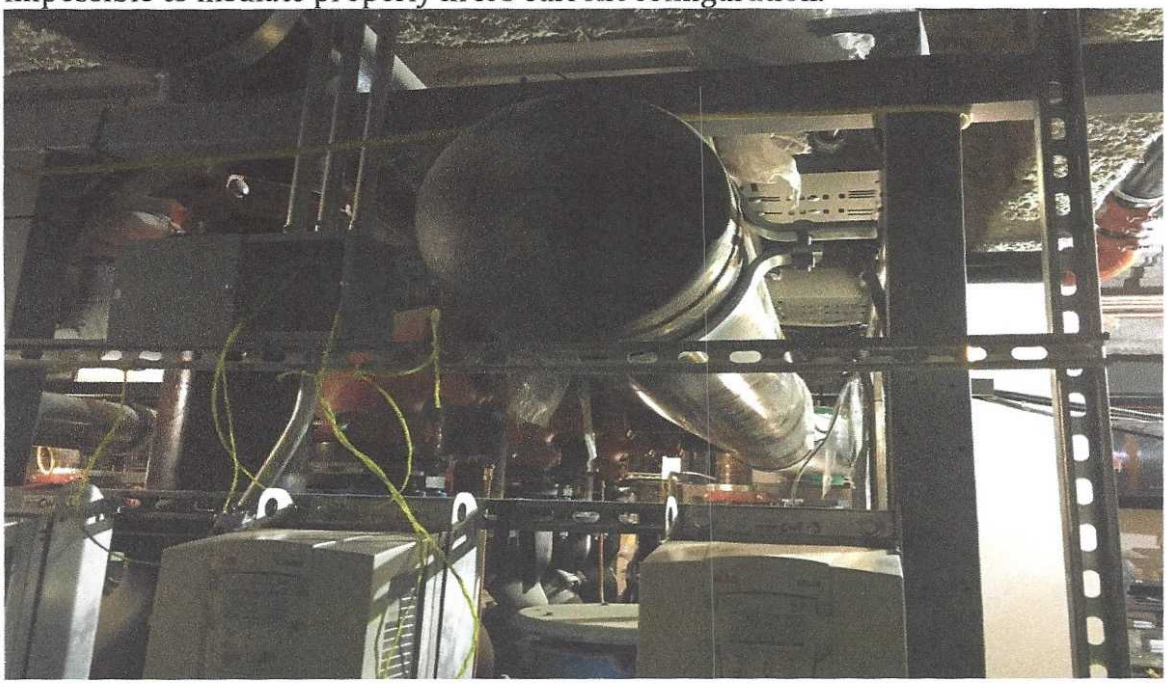
Picture #8: These two 6" chilled water lines are installed too close together to insulate with the proper insulation thickness. There is also no room to properly insulate the Victaulic fitting.



Picture #10: A riser clamp was used to install this 8" horizontal heating line. This will be very difficult to insulate properly. It would appear that a different hanger system should have been installed.



Picture #11: The unistrut is installed too close to this chilled water pipe. It will be impossible to insulate properly in it's current configuration.



Picture #12: .....The picture below shows some 6" chilled water lines that have insufficient insulation installed. This sleeve system has been used on a number of 4" heating lines as well. Some of these lines have been insulated as pictured below, but there are a significant number of these sleeve systems installed that haven't been tested or insulated yet. The sleeves I saw all had the same issue, not enough room to allow for the specified thickness of insulation to be installed. It would be timely to find another sleeve solution before these lines get tested and insulated.