

January 2020

PETERBOROUGH UTILITIES COMMISSION
CROSS CONNECTION CONTROL PRACTICE

PRACTICE

Definitions in this practice;

For the purposes of this practice, the following terms shall have the corresponding meanings:

“*ASSE*” means the American Society of Sanitary Engineering;

“*AWWA*” means the American Water Works Association;

“*Authorized Functions List*” means the list of functions and the persons authorized to carry out such functions as set out as Appendix “A” of this practice;

“*auxiliary water supply*” means any water source or system, other than the *City’s* water supply, that may be available in a *building* or on any property;

“*backflow*” means the flowing back of or reversal of the normal direction of flow of water;

“*backflow prevention device*” means a device that prevents *backflow*

“*building*” shall have the same meaning as set out in the Building Code Act, S.O. 1992, chapter 23, as amended, or any successor thereof;

“*City*” means the Corporation of the City of Peterborough and includes its employees, servants and agents;

“*Commission*” means the Peterborough Utilities Commission and includes its employees, servants and agents;

“*cross-connection*” means any actual or potential connection between a *potable water* supply or system and any source of pollution or contamination and includes any by-pass, jumper connection, removable section of pipe, swivel or changeover device and any other temporary or permanent connecting arrangement through which *backflow* may occur;

“*Cross-Connection Survey Form*” means the form approved for use by the Commission and set out as Appendix “B” of this practice;

“*CSA Standard*” means the document entitled *CAN/CSA-B64.10-17/CAN/CSA-B64.10.1-17 - Manual for the Selection and Installation of Backflow Prevention Devices/Manual for the Maintenance and Field Testing of Backflow Prevention Devices* published by the Canadian Standards Association, or any successor thereof;

“*Engineer*” means the Engineer for the Peterborough Utilities Commission or the Engineer’s authorized representative;

“*inspector*” means any person who is qualified to inspect plumbing systems as defined by the Ontario Building code;

“*Ontario Building Code*” means the Ontario Regulation 332/12 or any successor thereof made under the Ontario Building Code Act;

“*Owner*” means any person, firm or corporation having control over property to which this Schedule applies and includes the *owner* registered on the title of the property and any occupant of any *building* or *structure* located on such property;

“*OWWA*” means Ontario Water Works Association;

“*person*” means any person, firm or corporation having control over property to which this practice applies and includes the owner registered on the title of the property and any occupant of any *building* or *structure* located on such property;

“*potable water*” means water that is safe for human consumption;

“*premise isolation*” means isolation of the water located within a *building* or *structure* from the *City’s* water supply;

“*selection Guide*” means Annex B, Table B1 and B2 of the CSA B64.10-17 Standard;

“*source isolation*” means isolation of the water located within or having flowed through a source or potential source of contamination within a *building* or *structure* including a device, machine, water system or the like, from any *potable water* system;

“*structure*” means anything constructed or built permanently or temporarily which is provided with a source of *potable water*;

“*surveyor*” means any person, firm or corporation who is qualified to do *Cross Connection Control* prevention surveys under this practice;

“*tester*” means a person who is certified as a tester of *backflow prevention devices* holding an active OWWA Cross Connection Control Tester Certificate, an active ASSE Backflow Preventer Tester Certificate or approved equivalent;

“*test report*” means a report as approved by the Peterborough Utilities Commission in the form set out as Appendix “C” of this practice;

“*test tag*” means a tag as approved for use by the Peterborough Utilities Commission in the form set out as Appendix “D” of this practice;

“*water service pipe*” means a pipe on the property that conveys potable water from the drinking water system or a private water supply to the inside of the *building* or *structure*;

“*water distribution system*” means an assembly of pipes, fittings, valves and appurtenances that conveys potable water to water supply outlets, fixture, plumbing appliances and devices from the water service pipe or point of entry treatment unit located in the *building*;

“*water meter*” means the water meter installed within a premises to record the amount of water supplied to such premises by the *Commission*;

“*water purveyor*” means the *Commission* or its designated agent, and includes its employees, acting on its behalf; and

“*zone isolation*” means the isolation of the water located within an area of a *building* or *structure* from any *potable water* system located within such *building* or *structure*.

1. APPLICATION OF PRACTICE

1.0 This Practice applies to existing industrial, commercial, institutional and multi-residential *buildings* and *structures*, except *buildings* of residential occupancies within the scope of Part 9 of Ontario Regulation 332/12* (“the Ontario Building Code”) and classed as a minor hazard in the CSA Standard, Annex B, Table B2.

1.0.1 Notwithstanding Sentence 1.0, *owners* of residential buildings within the scope of Part 9 of the Ontario Building Code that have an *auxiliary water supply* shall, annually, provide the *Commission* with,

- a) a laboratory analysis by an accredited testing laboratory showing that the *auxiliary water supply* is potable, and
- b) written confirmation that the *auxiliary water supply* is not connected to the *City’s* water supply.

1.1 In addition to and notwithstanding section 1.0 of this Practice, this Practice applies where a condition exists in any *building* or *structure* that may be hazardous or detrimental to the *potable water* supply.

2. CROSS-CONNECTION PROHIBITED

2.0 No person or *owner* shall connect, cause to be connected, or allow to remain connected to the *City’s* water supply or any other *potable water* system any piping, fixture, fitting, container, appliance, vehicle, machine or the like in a manner which may under any circumstance allow water, waste water or any other liquid, chemical or substance to enter such supply or system, except in compliance with the provisions of this practice.

2.1 In addition to section 2.0 and in accordance with all other provisions of this Practice, every *owner* of property to which this Practice applies shall ensure that a *backflow prevention device* is installed in respect of *premise isolation, source isolation and zone isolation* in every *building* or *structure* where a *City* water supply or other *potable water* exists.

2.2 No person or *owner* shall connect, cause to be connected, or allow to remain connected to the *City’s* water supply any *auxiliary water supply*.

3. PERSONS PERMITTED TO CARRY OUT WORK

3.0 Only the persons listed in the *Authorized Functions List* in Appendix “A” shall carry out the corresponding functions set out in such List.

4. APPLICATION OF CSA STANDARD

4.0 Except as otherwise set out in this Practice, the selection, installation, maintenance and field testing of *backflow prevention devices* shall be in accordance with the *CSA Standard (B64.10-17 and B64.10.1-17)*.

4.1 Wherever the CSA Standard and this Practice are in conflict, the provisions of this Practice shall prevail.

5. SELECTION OF BACKFLOW PREVENTION DEVICES

5.0 Every *owner* of a *building* or *structure* of a type set out in section 1.0 of this Practice shall, every five years or as otherwise required by the *Commission*, cause to be carried out a survey of each of his or her *buildings* and *structures* with respect to all existing *cross-connections* and all existing and required *backflow prevention devices* and:

5.0.1 shall ensure that such survey is carried out on a *Cross-Connection Survey Form* by a person permitted to do so pursuant to the *Authorized Functions List*; and

- 5.0.2 shall ensure that the completed *Cross-Connection Survey Form* is provided to the *Commission* within 14 days of the survey being conducted.
- 5.1 Every *owner* shall ensure that every *backflow prevention device* required for *premise isolation* on his or her property is a testable device and is the proper device to be used pursuant to section 5.2 of this Practice.
- 5.2 *Backflow prevention devices* for *premise, source* or *zone isolation* shall be determined:
- 5.2.1 using the *CSA B64.10-17 Standard*, Annex B, Table B1 and B2.
- 5.3 Despite section 5.2 of this Schedule, the *Commission* may require that a particular *backflow prevention device* be used in respect of any *cross-connection*.
- 5.4 Despite section 5.3.4.2(a) of the *CSA B64.10-17 Standard* and Article 7.7.1.1. of the Ontario Building Code a dual check valve device shall not be used for *premise isolation*.
- 5.5 Despite section 5.2. of this Practice, where a source isolation backflow prevention device has been installed by the manufacturer of equipment, the cross-connection is required to be reviewed to determine if the backflow prevention device meets the requirements of the Selection Guide. These cross-connections are to be indicated on the Cross-Connection Survey.

6. INSTALLATION OF BACKFLOW PREVENTION DEVICES

- 6.0 Every person installing a *backflow prevention device* shall ensure that:
- 6.0.1 such device is installed in accordance with acceptable engineering practices and the requirements of the Ontario Building Code,(Ontario Regulation 332/12) as amended, this Schedule, and the *CSA B64.10.1-17 Standard*;
- 6.0.2 such device is installed, to manufacturer's instructions, in a *building* or *structure*;
- 6.0.3 such device is located in such a manner so that in the event of *backflow* the device prevents contamination of the *City's* water supply and any other *potable water* system;
- 6.0.4 where such device is installed in respect of *premise isolation*, such device is located within a maximum of 3.0 meters downstream of the *water meter*, except where circumstances require the device to be installed upstream of the *water meter* and such location is to the satisfaction of the *Commission*;
- 6.0.5 where such device is installed in respect of premise isolation, all piping between the water meter and such device is clearly labeled "no connection permitted";
- 6.0.6 where such device is installed in respect of source or zone isolation, all piping between the point of contamination and the point at which the device is located is labeled "non-potable water"; and
- 6.0.7 where such device is installed in a public pool as defined in the Ontario Building Code (Ontario Regulation 332/12) as amended, all exposed water piping and chlorine piping within the water treatment service room shall be colour coded by means of:
- a. painting the entire outer surface of the piping, or
 - b. coloured bands at least 25mm (1 in) in width that are spaced along the piping at intervals of not more than 1200mm (4ft 1in)

- c. colour coding referred to in 6.07 a & b shall be yellow for chlorine and green for *potable water*

6.1 Every *owner* of property upon which a *backflow prevention device* is installed shall ensure that such device is in proper working order at all times.

7. TESTING OF DEVICES

7.0 Every person who tests a *backflow prevention device* shall carry out such testing in accordance with this Policy and the *CSA B64.10.1-17 Standard*.

7.1 In addition to the testing methods set out in section 8 of the *CSA Standard*, test procedures established by the *ASSE* or *OWWA/AWWA* for testing *backflow prevention devices* may be employed.

7.2 Despite section 4.3.1 of the *CSA B64.10.1-17 Standard*, every person who tests a *backflow prevention device* shall enter the results of such test on a *Test Report*.

7.3 Every person who tests a *backflow prevention device* shall:

7.3.1 within 14 days of carrying out such test, provide a legible *Test Report* to the *Commission* in respect of such test;

7.3.2 upon completing such test, complete and affix a Peterborough Utilities *Test Tag* to the device or immediately adjacent to the device on the piping connected thereto; and

7.3.3 upon finding that such device is malfunctioning or otherwise not in proper working order, immediately notify the *owner* of the premises and the *Commission* of such condition.

7.4 Every *owner* who has a *backflow prevention device* located on his or her property shall ensure that:

7.4.1 such device is tested by a *tester* when it is first installed and annually thereafter or when requested by the *Commission* and also when it is cleaned, repaired, overhauled or relocated;

7.4.2 when such device is tested that a *Test Report* of such test is provided to the *Commission* within 14 days of the test being conducted; and

7.4.3 in the event that such device is malfunctioning or otherwise not in proper working order, the device is immediately repaired or replaced.

8. INSPECTIONS

8.0 The *Commission* or its designate may at any reasonable time enter onto the property of any *owner* to inspect for compliance with this Practice.

8.1 Where the *Commission* finds that a condition exists on any property that may allow contamination of the municipal water supply or the contamination of any other *potable water* system on such property, including any residential *building* or *structure*, the *Commission* may:

8.1.1 order the *owner* to eliminate the condition and in so doing may prescribe the time period for compliance with such Order; or

8.1.2 shut off the water supply to the property or any portion thereof until the condition is eliminated.

9. GENERAL PROVISIONS

9.0 In addition to any other provision of this Practice, the *Commission* may at any time order an *owner* to conduct tests, provide reports and undertake any other

measures required for the prevention of *backflow* or protection of a *cross-connection*.

- 9.1 Where a time frame is set out in this Practice for carrying out any action, the *Commission* may extend the time for compliance beyond the established time frame provided such extension is required and is acceptable to the *Commission*.
- 9.2 Appendices "A" through "D" inclusive and the *CSA Standards B64.10-17 and B64.10.1-17* shall form part of this Schedule.
- 9.3 No *person* shall remove a backflow preventer unless prior approval is received from the *Commission*.

Notes to Practice

1. A *building* permit may be required pursuant to the Building Code Act to install a *backflow prevention device*. The provisions of the Act pertaining to such building permit continue to apply to each installation in addition to the provisions of this Practice. Permits are required for devices as noted in the *Cross-Connection Survey Form*.

RATIONALE

The Peterborough Utilities Commission wishes to preserve the integrity of the water distribution system for the City of Peterborough and that all water provided by the system to the users plumbing system is protected by a means of cross connection control and meets the standards of the prescribed drinking water quality standards.

APPENDIX "A"
To practice

AUTHORIZED FUNCTIONS LIST

ITEM	FUNCTION	Professional Engineer with Tester's Licence	* Certified Engineering Technologist with Tester's Licence	Licensed Master Plumber with Contractor and Tester's Licence	** Journeyman Plumber with Tester's Licence	*** Apprentice Plumber with Tester's Licence	Fire System Sprinkler Fitter with a Tester's Licence	Lawn Irrigation System Installer with Tester's Licence
1	Carry out Cross Connection Survey	✓	✓	✓	✓			
2	Install, Relocate or Replace Backflow Prevention Device			✓	✓	✓		
3	Repair of Backflow Prevention Device	✓	✓	✓	✓	✓		
4	Test Backflow Prevention Device	✓	✓	✓	✓	✓		
5	Items 1, 2, 3 & 4 above in Respect of Fire Protection Systems						✓	
6	Items 3 & 4 above in Respect of Lawn Sprinkler Systems							✓

* Required to be under the direction of a Professional Engineer.

** Required to be employed by a Licensed Plumbing Contractor.

*** Required to be employed by a Licensed Plumbing Contractor and under the direct supervision of a Journeyman Plumber or Master Plumber.

APPENDIX "B"
To practice



1867 Ashburnham Drive
PO Box 4125, Station Main
Peterborough ON K9J 6Z5
(705)748-9300

**CROSS CONNECTION
CONTROL PROGRAM
SURVEY REPORT**

This form is to be used for review of a facility for compliance with the Peterborough Utilities Commission (PUC) Cross Connection Control Program (CCCP) and the CSA-B64.10-17 Standard.

Please indicate the existing and/or proposed backflow devices for the water distribution (plumbing) system.

Date of Last Survey		Date of New Survey	
Company/Facility		Owner	
Address		Phone	
Owner Address (if different from above)			
Contact Person		Phone	
Type of Use		Hazard Level <input type="checkbox"/> Severe <input type="checkbox"/> Moderate <input type="checkbox"/> Low	
Registered Tester Name		Certification #	
Business Name		Phone	
Is there premise isolation on the domestic water supply system? <input type="checkbox"/> Yes <input type="checkbox"/> No			

Please provide the following information if there is premise isolation

Location of Device	Type of Device	Acceptable Protection	Comment

Have provisions been made for thermal expansion Yes No If yes, see below

Expansion tank Other Identify Type

Is there a fire protection system?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is there premise isolation on the fire protection system?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is there anti-freeze in any part of the fire protection system?	<input type="checkbox"/> Yes <input type="checkbox"/> No

If you answered yes to any of the above please fill in the following information.



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CROSS CONNECTION CONTROL PROGRAM SURVEY REPORT

List all existing devices at this location

Location of Device	Type of Device	Acceptable Protection	Serving what Equipment
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	

Are there actual or potential cross connections that are not protected? Yes No

If yes, please provide the following information:

Location	Hazard	Recommendation for Compliance with CCCP*

Note: For Hazard rating S (severe) M (moderate) L (low)

The PUC has jurisdiction over all selections. Please refer to Appendix B of CSA B64.10 for the correct type of device for recommendations for compliance. The surveyor shall provide copies of this report to the PUC and owner of property within 14 days of the survey date.

I certify that the information in this report and any other attached document(s) is true to the best of my knowledge and recommendations are made in compliance with the CCCP and CSA Standard.

Signature of Registered Tester _____ Date _____

APPENDIX "C"

To practice

CROSS CONNECTION CONTROL PROGRAM TEST REPORT



1867 Ashburnham Drive
PO Box 4125, Station Main
Peterborough ON K9J 6Z5
(705)748-9300

To be completed clearly and submitted to the PUC within 14 days of the test. Forms missing any information will be returned as unacceptable.

Address of Device			Occupant			Contact			Telephone Number			
Owner			Address of Owner			Postal Code			Telephone Number			
Serial Number		Make		Model		Size		Install Date (yyyy/mm/dd)		Device Tagged? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Installed on What System? <input type="checkbox"/> Premise <input type="checkbox"/> Fire <input type="checkbox"/> Irrigation <input type="checkbox"/> Zone				Location of Assembly (ie. Room Number)								
Tester Name and Certification Number				Make of Test Kit		Model Number		Serial Number		Date of Last Calibration		
Business Name			Business Address			Postal Code			Telephone			
Type of Test <input type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Repair <input type="checkbox"/> Replaces Serial # _____				Type of Device <input type="checkbox"/> RP <input type="checkbox"/> DCVA <input type="checkbox"/> PVB <input type="checkbox"/> SRPVB <input type="checkbox"/> RPF <input type="checkbox"/> DCVAF <input type="checkbox"/> SCVAF								
TEST	RP/RPF Assembly		Check Valve 2		Check Valve 1		DCVA, DCVAF, SCVAF		PVB/SRPVB ASSEMBLY		Shut Off Valves	
	<input type="checkbox"/> Relief Valve Failed to Open		<input type="checkbox"/> Leaked <input type="checkbox"/> Closed Tight		<input type="checkbox"/> Leaked <input type="checkbox"/> Closed Tight		<input type="checkbox"/> Leaked <input type="checkbox"/> Closed Tight		<input type="checkbox"/> Failed to Open <input type="checkbox"/> Opened		<input type="checkbox"/> Leaked <input type="checkbox"/> Closed Tight	
	Pressure Differential Across 1st Check Valve (no flow) <u>A</u> _____ psi/kPa						Pressure drop _____ psi Across check _____ kPa		Pressure drop _____ psi Across check _____ kPa		Opened at _____ psi Pressure drop _____ psi Across check _____ kPa	
	Opened, Opening Point of Relief Valve (2 psi or greater) <u>-B</u> _____ psi/kPa		Buffer (3 psi or greater) <u>A - B = C</u> _____ psi/kPa									
	Static inlet line pressure at time of test _____ psi/kPa				Test Result <input type="checkbox"/> Passed <input type="checkbox"/> Failed				Test Date (yyyy/mm/dd)			
If the device fails the initial test for any reason, complete the sections below, noting the repairs and retest results.												
REPAIR	Check Applicable Valve(s) <input type="checkbox"/> Relief Valve <input type="checkbox"/> Check Valve #1 <input type="checkbox"/> Check Valve #2 <input type="checkbox"/> Air Inlet Valve <input type="checkbox"/> Shut Off Valve											
	Check Applicable Repair <input type="checkbox"/> Cleaned; Replaced: <input type="checkbox"/> Disc <input type="checkbox"/> Spring <input type="checkbox"/> Diaphragm <input type="checkbox"/> Seat <input type="checkbox"/> Guide <input type="checkbox"/> O-Rings <input type="checkbox"/> Poppet <input type="checkbox"/> Repair Kit											
RETEST	RP/RPF Assembly		Check Valve 2		Check Valve 1		DCVA, DCVAF, SCVAF		PVB/SRPVB ASSEMBLY		Shut Off Valves	
	<input type="checkbox"/> Relief Valve Failed to Open		<input type="checkbox"/> Leaked <input type="checkbox"/> Closed Tight		<input type="checkbox"/> Leaked <input type="checkbox"/> Closed Tight		<input type="checkbox"/> Leaked <input type="checkbox"/> Closed Tight		<input type="checkbox"/> Failed to Open <input type="checkbox"/> Opened		<input type="checkbox"/> Leaked <input type="checkbox"/> Closed Tight	
	Pressure Differential Across 1st Check Valve (no flow) <u>A</u> _____ psi/kPa						Pressure drop _____ psi Across check _____ kPa		Pressure drop _____ psi Across check _____ kPa		Opened at _____ psi Pressure drop _____ psi Across check _____ kPa	
	Opened, Opening Point of Relief Valve (2 psi or greater) <u>-B</u> _____ psi/kPa		Buffer (3 psi or greater) <u>A - B = C</u> _____ psi/kPa									
	Static inlet line pressure at time of test _____ psi/kPa				Retest Result <input type="checkbox"/> Passed <input type="checkbox"/> Failed				Retest Date (yyyy/mm/dd)			
I certify the above device has been tested in accordance with Peterborough Utilities Commission Practice and CSA B64.10-01												
Signature of Certified-Tester			Date (yyyy/mm/dd)			Signature of Owner/Tenant			Date (yyyy/mm/dd)			
Remarks/Comments												
FOR OFFICE USE ONLY		Testing Frequency <input type="checkbox"/> Semi-Annual <input type="checkbox"/> Annual <input type="checkbox"/> Bi-Annual <input type="checkbox"/> Tri-Annual				Inspector's Signature				Date (yyyy/mm/dd)		

APPENDIX "D"

To practice

TEST TAG

Front of tag

Peterborough Utilities Water Department - Inspection Services (705)- 748-9300		DATE INSTALLED		
BACKFLOW PREVENTION ASSEMBLY TAG		YY	MM	DD
ADDRESS				
TYPE OF ASSEMBLY <input type="checkbox"/> RP <input type="checkbox"/> DCVA <input type="checkbox"/> PVB		MANUFACTURER		SIZE
MODEL NUMBER:		SERIAL NUMBER		
LOCATION:				
<u>DO NOT REMOVE</u>				

Reverse side of tag

TEST DATE YY MM DD			TESTER'S COMPANY	TESTER'S NO.	TESTER'S INITIALS
<u>DO NOT REMOVE</u>					