



**BY-LAW NUMBER 50-2004
OF
THE CORPORATION OF THE CITY OF STRATFORD**

BEING a By-law to regulate the supply of safe and wholesome water to the citizens in the City of Stratford (Cross Connection By-law).

WHEREAS Section 130 of the *Municipal Act, 2001, S.O. 2001, c.25*, as amended from time to time, authorizes a municipality to regulate matters for purposes related to the health, safety and well-being of the inhabitants of the municipality;

AND WHEREAS Section 11(1) 4 of the *Municipal Act, 2001, S.O. 2001, c.25*, as amended from time to time, authorizes a municipality to pass by-laws respecting matters relating to public utilities;

AND WHEREAS Section 80(1) of the *Municipal Act, 2001, S.O. 2001, c.25*, as amended from time to time, authorizes a municipality, at reasonable times, to enter on land to which it supplies a public utility to inspect, repair, alter or disconnect the service pipe or wire, machinery, equipment and other works used to supply the public utility;

AND WHEREAS Section 80(2) of the *Municipal Act, 2001, S.O. 2001, c.25*, as amended from time to time, authorizes the municipality to shut off or reduce the supply of the public utility to the land;

AND WHEREAS Section 80(3) of the *Municipal Act, 2001, S.O. 2001, c.25*, as amended from time to time, authorizes the municipality to enter on the land to shut off the supply of the public utility, to remove any property of the municipality or to determine whether the public utility has been or is being unlawfully used.

NOW THEREFORE BE IT ENACTED by Council of Corporation of the City of Stratford as follows:

1.0 Citation

This by-law shall be known as the "**Cross Connection Control By-law**" of the Corporation of the City of Stratford.

2.0 Definitions

In this By-law:

"**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 in Appendix A of this By-law;

"**Authorized Person**" means a person who is authorized to carry out a function as set out in the Authorized Functions List, Appendix A of this By-law;

“Auxiliary water supply” means any water source or system other than the City’s direct water supply that may be available in a building or on any property, including any recycled water or cistern;

“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 and includes a reduced pressure principle assembly, dual check valve, double check valve and the like;

“Building” shall have the same meaning as set out in the *Building Code Act, S.O. 1997, chap. 23, as amended*, or any successor thereof and shall include a sprinkler system;

“Chief Building Official” means a chief building official or his or her designate appointed or constituted under sections 3 or 4 of the *Ontario Building Code Act* for The Corporation of the City of Stratford;

“City” means The Corporation of the City of Stratford 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 set out in Appendix B of this By-law;

“CSA Standard” means the document entitled *National Standard of Canada-CAN/CSA-B64.10-94 and Amendments-Manual for the Selection, Installation, Maintenance and Field Testing of Backflow Prevention Devices-Plumbing Products or Materials-A* National Standard of Canada published in 1994 by the Canadian Standards Association or any successor thereof;

“Director of Infrastructure and Development Services” means the Director of Infrastructure and Development Services of The Corporation of the City of Stratford and includes his or her designate;

“Good repair” means:

- free from health hazard,
- free from fire hazard,
- in good working order,
- not in poor condition by reason of deterioration, neglect, damage or defacement,
- able to perform its intended function, and;
- protected from freezing

“High or severe hazard location” means any location where any cross connection or potential cross connection does or potentially could involve any substance that could be a danger to health. Examples shall include but are not limited to hospitals, all establishments involving chemical usage, high hazard uses as defined by The Canadian Standards Association or any other use as determined from time to time by the Director of Infrastructure and Development Services and/or the Chief Building Official;

“Owner” means any person, firm or corporation having control over property to which the By-law 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 the building or structure from the City’s water supply;

“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;

“Survey” means a complete review of the potable water system or systems located within a building or structure to determine the presence of any existing backflow prevention systems and/or any cross connections;

“Testable” means the ability to conduct tests to determine if a device is functioning properly;

“Tester” means a person who is a certified backflow prevention device tester who has successfully completed a cross connection course in backflow prevention device testing at an accredited school or college as defined in the CAN/CSA B64.10-94;

“Test Report” means a report in the form set out as Appendix C of this Schedule;

“Water meter” means the water meter installed within a premises to record the amount of water supplied to such premises by the City; and

“Water purveyor” means any City owned and operated water supply and distribution system;

“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.

3.0 Application

- 3.1 This By-law 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 403/97 (the Ontario Building Code)*.
- 3.2 Notwithstanding Section 3.1 of this By-law, this by-law applies to lawn sprinkler systems and also applies where a condition exists in any building or structure that may be hazardous or detrimental to the potable water supply as determined by the Chief Building Official or the Director of Infrastructure and Development Services.

4.0 Cross Connection Prohibited

- 4.1 No person or owner shall connect, cause to be connected or allow to remain connected to the water purveyor 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, any source of pollution or any other liquid, chemical or substance to enter such supply or system except in compliance with the provisions of this by-law.
- 4.2 The Director of Infrastructure and Development Services may require premise isolation or zone isolation at any high or severe hazard location.
- 4.3 In all cases, premise isolation shall be required where an auxiliary water supply exists.

5.0 Persons Permitted to Carry Out Work

- 5.1 Only the persons listed in the Authorized Functions List, Appendix A, shall carry out the corresponding functions set out in such list.
- 5.2 Any person permitted to carry out work, as outlined in Authorized Functions List, Appendix A, shall produce upon request of the Chief Building Official, a current testers certificate.

6.0 Application of CSA Standard

- 6.1 Except as otherwise set out in this by-law, the selection, maintenance and field testing of backflow prevention devices shall be in accordance with the CSA Standard.
- 6.2 Wherever the CSA Standard and this By-law are in conflict, the provisions of this By-law shall prevail.

7.0 Selection of Backflow Prevention Devices

- 7.1 Every owner shall ensure that every backflow prevention device required for premise isolation, zone isolation or source isolation on his or her property is the proper device to be used pursuant to the provisions of this By-law.
- 7.2 Backflow prevention devices for premise, source, or zone isolation shall be determined:
 - 7.2.1 By using the Selection Guide in the CSA Standard, or
 - 7.2.2 When the type of cross connection is not identified in the Selection Guide, by a professional engineer using the CSA Standard.
- 7.3 Notwithstanding Section 7.2, the Chief Building Official or the Director of Infrastructure and Development Services may require that a particular backflow prevention device be used in respect of any cross connection.
- 7.4 Notwithstanding Section 7.3 of this By-law, where the manufacturer of equipment has installed a source isolation backflow prevention device, 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 when the Survey is required.

8.0 Installation of Backflow Prevention Devices

- 8.1 Every person installing a backflow prevention device shall ensure that:
 - 8.1.1 Such device is installed in accordance with acceptable engineering practices; the requirements of the Building Code (Ontario Regulation 403/99), as amended; this By-law; and the CSA Standard;
 - 8.1.2 Such device is installed in a building or structure;
 - 8.1.3 Such device is located in such a manner so that in the event of backflow the device prevents contamination of the water purveyor and any other potable water system;
 - 8.1.4 Where such device is installed in respect of premise isolation, such device is located within a maximum of 3.0 metres 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 Chief Building Official;

- 8.1.5 Where such device is installed in respect of premise isolation, all piping between the water meter and such device is clearly labelled “no connection permitted”;
- 8.1.6 Where such device is installed in respect of source or zone isolation, all piping between the point of contamination or potential contamination and the point at which the device is located is labelled “non-potable water”;
- 8.1.7 Where such device is installed in a public pool as defined in the Ontario Building Code (Ontario Regulation 403/97) 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 1,200mm (4 ft. 1 in.);
 - c) Colour coding referred to in (a) and (b) shall be yellow for chlorine and green for potable water.

8.2 Installation of backflow devices require plumbing permits and inspections as required by the *Ontario Building Code* and the City of Stratford Building By-law.

9.0 Testing of Devices

- 9.1 Every owner who has a testable backflow prevention device located on his or her property shall ensure that:
 - 9.1.1 A tester tests the device when it is first installed and annually thereafter or as required by the CSA Standard or earlier if requested by the Chief Building Official and also when it is cleaned, repaired, overhauled or relocated;
 - 9.1.2 When the device is first installed and tested, that a Test Report, Appendix C, of such test be submitted to the Chief Building Official within 14 days of the test being conducted;
 - 9.1.3 When the device is tested annually thereafter, that a Test Report, Appendix C, of such test be available on site for review as required by the Chief Building Official;
 - 9.1.4 When the device is tested as a requirement for maintenance or as required by the CSA Standard, that a Test Report, Appendix C, of such test be available on site for review as required by the Chief Building Official;
 - 9.1.5 When the device is tested as requested by the Chief Building Official, that a Test Report, Appendix C, of such test be submitted to the Chief Building Official within 14 days of the test being conducted;
 - 9.1.6 When a device is tested and a Test Report, Appendix C, of such test has been completed, said report is retained on site for a period of not less than seven years.
- 9.2 Every person who tests a backflow prevention device shall carry out such testing in accordance with this By-law and the CSA Standard.

- 9.3 In addition to the testing methods set out in Section 6 of the CSA Standard, test procedures established by the ASSE or AWWA for testing backflow prevention devices may be employed.
- 9.4 Notwithstanding Section 6.3.1 of the CSA Standard or its successor, every person who tests a backflow prevention device shall enter the results of such test on a Test Report, Appendix C.
- 9.5 Every person who tests a backflow prevention device shall:
 - 9.5.1 Upon finding that such device is malfunctioning or otherwise not in proper working order, immediately notify the owner of the premises and the Chief Building Official or the Director of Infrastructure and Development Services of such condition.

10.0 Inspections and Surveys

- 10.1 Upon inspection and/or notification of the Chief Building Official or when otherwise ordered, every owner of a building or structure deemed to be a high or severe hazard location by the Chief Building Official and/or the Director of Infrastructure and Development Services shall cause to be carried out a Survey, Appendix B at the owner's expense of each of his or her buildings and structures with respect to all existing cross connections and all existing and required backflow prevention methods and devices, and
 - 10.1.1 Shall ensure such survey is carried out by a person permitted to do so pursuant to the Authorized Functions List, Appendix A; and
 - 10.1.2 Shall ensure that the Cross Connection Survey Form is complete and includes the current testers certificate number; and
 - 10.1.3 Shall ensure that the completed Cross Connection Survey Form, Appendix B, is provided to the Chief Building Official within the specified time period.
- 10.2 Every owner of a building or structure which has carried out the Cross Connection Survey as required by the Chief Building Official or Director of Infrastructure and Development Services shall submit to the Chief Building Official a Certificate of Compliance Form, Appendix D, annually thereafter, on the anniversary date of the completed Cross Connection Survey, advising of compliance with the By-law.
- 10.3 The City may, on reasonable notice, at any reasonable time enter onto the property of any owner to inspect for compliance with this By-law.
- 10.4 No person shall hinder or obstruct, or attempt to hinder or obstruct, an inspector in the exercise of a power or performance of a duty under this by-law.

11.0 Contraventions and Orders to Correct

- 11.1 Where the City finds that a condition exists on any property that may allow contamination of the City's water supply or the contamination of any other potable water system on such property, including any residential building or structure, the Chief Building Official may;
 - 11.1.1 Order the owner to eliminate the condition and in so doing, prescribe the time period for compliance with such Order; or
 - 11.1.2 If the time period for compliance as prescribed in subsection 11.1.1 passed without compliance with such order, notify the Director of Infrastructure and Development Services who may shut off the water

supply to the property or any portion thereof until the condition is eliminated; or

11.1.3 Notify the Director of Infrastructure and Development Services who immediately may shut off the water supply to the property or any portion thereof until the condition is eliminated, if the condition is, or potentially is, hazardous to the health or safety of persons in the normal use of the building, persons outside the building or persons whose access to the building has not been reasonable prevented;

11.1.4 Where any person contravenes any provision of this By-law, in addition to any other measures permitted to be taken by the City to address such contravention, the City may shut off the water to the affected property or any portion thereof until the contravention is rectified.

11.2 This By-law comes into effect on April 1, 2004 as it relates to all other locations.

12.0 General Provisions

12.1 A building permit is required to be obtained pursuant to the Building Code Act to install a backflow prevention device. The provisions of the Act and the regulations pertaining to such building permit continue to apply to each installation in addition to the provisions of this By-law.

12.2 Every owner of property upon which a backflow prevention device is installed shall ensure that such device is in good repair at all times.

12.3 In addition to any other provision of the By-law, the Chief Building Official may at any time order an owner, at the owner's expense, to conduct tests, provide reports and undertake any other measures required for the prevention of backflow or cross connection.

12.4 Where a time frame is set out in this By-law for carrying out any action, the City may extend the time for compliance beyond the established time frame on approval by the Director of Infrastructure and Development Services and Chief Building Official.

13.0 Removal of Backflow Prevention Devices Prohibited

13.1 No person shall remove a backflow prevention device or part thereof after it has been installed and no owner of a building or structure in which a backflow prevention device is installed shall cause or permit the removal of such device, unless such removal is:

13.1.1 to facilitate the repair of the device and such device is replaced immediately after such repair is carried out;

13.1.2 to replace the device with another device that meets or exceeds the provisions of the By-law.

14.0 Offences

14.1 Every person who contravenes any position of this by-law is guilty of an offence, and, upon conviction, is liable under any of the provisions of the *Provincial Offences Act, R.S.O. 1990, Chapter P.33*.

15.0 Backflow Prevention Device Permit Fees

15.1 All fees for permits for the installation of backflow prevention devices shall be in conformance with the City of Stratford Building By-law.

**This is Appendix "A" to By-law Number 50-2004
enacted this 22nd day of March, 2004**

Authorized Functions List

Function	Prof. Eng. with Tester Certificate	Licensed Master Plumber with Tester Certificate	Journeyman Plumber with Tester Certificate (1)	Water Distribution System Operator with Tester Certificate	Apprentice Plumber with Tester Certificate (2)	Fire System Sprinkler Fitter with Tester Certificate	Lawn Irrigation System Installer with Tester Certificate
"A" Carry Out Cross Connection Survey	Yes	Yes	Yes	Yes	No	No	No
"B" Install, Relocate, or Replace Backflow Prevention Device	No	Yes	Yes	No	Yes	No	No
"C" Repair of Backflow Prevention Device	Yes	Yes	Yes	Yes	Yes	No	No
"D" Test Backflow Prevention Device	Yes	Yes	Yes	Yes	Yes	Yes	Yes
"E" Items B, C & D above in relation of Fire Protection System	Yes	Yes	Yes	No	Yes	Yes	No
"F" Complete Compliance Certificate	Yes	Yes	Yes	Yes (3)	No	Yes (4)	Yes (5)

Notes to Appendix "A":

- (1) A Licenced Journeyman Plumber shall be employed by a Licenced Plumbing Contractor
- (2) An Apprentice Plumber shall be employed by a Licenced Plumbing Contractor and the direct supervision of a Journeyman Plumber or Master Plumber
- (3) Property owned, leased, used and operated by city only
- (4) For buildings with fire sprinkler systems and no other device
- (5) For buildings with irrigation systems and no other device

**This is Appendix "B" to By-law Number 50-2004
Enacted this 22nd day of March, 2004**

CROSS CONNECTION SURVEY

Plumbing System		Fire Protection System		Lawn Sprinkler System		Date:		Page No.		
Facility:		Address:		Owner:		Report Given to:				
Surveyor:			Certificate #:		Phone #:					
	Location of Cross Connection	Existing Protection Type	Serial # (If Applicable)	Date of Last Test (If Applicable)	Degree Of Hazard	Acceptable Protection Yes/No	Required Upgrade	Selection From	Remarks	
1.										
2.										
3.										
4.										
5.										
6.										
<u>Selection from:</u> S – Can/CSA B64 Selection Guide P – Professional Engineer (Attach selection documentation) M – Manufactured Supplied Device B – Selected in accordance with Backflow Prevention By-law requirements			<u>Device Type:</u> AG – Air Gap *AVB – Atmospheric Type Vacuum Breaker *DCAP – Dual Check Valve Type with Atmospheric Port *DCVA – Double Check Valve Assembly Type *DUC – Double Check Valve Type *DUCV – Dual Check Valve Type with Intermediate Vent HCVB – Hose Connection Type Vacuum Breaker			<u>Device Type:</u> *LACV – Listed Alarm Check Valve LFVB – Laboratory Faucet Type Vacuum Breaker N – None *PVB – Pressure Type Vacuum Breaker *RSCV – Resilient Sealed Check Valve *RP – Reduced Pressure Principle Type * Permits required for installation of these devices			<u>Degree of Hazard:</u> H – High M – Medium L – Low	
All selections shall be made in accordance with the City of Stratford Backflow Prevention By-law requirements – The City has jurisdiction over all selections. Note: Surveyor required to submit copies of this report to the Chief Building Official of the City of Stratford and owner of property within the specified time period.										

**This is Appendix "C" to By-law Number 50-2004
Enacted this 22nd day of March, 2004**



APPENDIX "C"
BACKFLOW PREVENTION DEVICE TESTING AND
INSPECTION REPORT

Building Address:	Postal Code:
Owner:	Phone #
Occupant:	Postal Code:
Contact Person:	Phone #
Tester's Name:	Phone #
Tester's Address:	Postal Code:
Tester's Cert. No.	Test Kit Calibration Due Date

Device Location _____ Test Date _____

Type of Assembly	Make _____	Type of Test
Reduced Pressure <input type="checkbox"/>	Model _____	<input type="checkbox"/> Initial <input type="checkbox"/> Annual
Double Check Valve <input type="checkbox"/>	Serial No: _____	<input type="checkbox"/> Passed <input type="checkbox"/> Failed
Pressed Vacuum Breaker <input type="checkbox"/>	Size _____	Line Pressure At time of Test _____

Reduced Pressure Backflow Assembly	Differential Pressure
Check Valve No. 1 <input type="checkbox"/> Leaked <input type="checkbox"/> Closed Tight Pressure Differential Across No. 1 Check _____	Check Valve No. 2 <input type="checkbox"/> Leaked <input type="checkbox"/> Closed Tight Pressure Differential Across No. 2 Check _____
	Relief Valve <input type="checkbox"/> Failed to open Opened at _____

Shut Off Valve No. 2 Leaked Closed Tight

Double Check Valve		Pressure Vacuum Breaker Air Inlet Valve
Check Valve No. 1 With Flow <input type="checkbox"/> Leaked <input type="checkbox"/> Closed Tight <input type="checkbox"/> Against Flow <input type="checkbox"/> Leaked <input type="checkbox"/> Closed Tight <input type="checkbox"/> Pressure Differential Across No. 1 Check _____	Check Valve No. 2 With Flow <input type="checkbox"/> Leaked <input type="checkbox"/> Closed Tight <input type="checkbox"/> Against Flow <input type="checkbox"/> Leaked <input type="checkbox"/> Closed Tight <input type="checkbox"/> Pressure Differential Across No. 1 Check _____	Opened At _____ <input type="checkbox"/> Failed to Open Check Valve <input type="checkbox"/> Leaked <input type="checkbox"/> Closed Tight Pressure Differential Across Check Valve _____

If assembly fails test, complete this section and note repairs.

Remarks: _____

Distribution: White - City of Stratford Yellow - Licensed Tester Pink - Occupant or Owner	Tester's Signature _____	For Office use only _____ _____ _____
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**This is Appendix "D" to By-law Number 50-2004
Enacted this 22nd day of March, 2004**

CERTIFICATE OF COMPLIANCE

Building Address: _____ Date: _____

Owner Name: _____

Occupant Name: _____

Contact Person: _____

Phone #: _____

Authorized Person (Please Print): _____

Testers' Certificate Number: _____

This is to certify that all existing cross connections and required backflow prevention methods and devices at the above noted address are in compliance with the City of Stratford Cross Control Connection By-law # 50-2004.

Signature of Owner: _____

Signature of Authorized Person: _____