

THE CORPORATION OF THE TOWN OF HAWKESBURY

BY-LAW N° 59-2012

A By-law on Backflow prevention

WHEREAS subsection 11 (2) (6) of the *Municipal Act, 2001*, as amended, authorizes a municipality to pass by-laws respecting health, safety and well-being of persons;

AND WHEREAS subsection 11 (3) (4) of the *Municipal Act, 2001*, as amended, authorizes a municipality to pass by-laws respecting public utilities;

AND WHEREAS section 445 of the *Municipal Act, 2001*, as amended, states that if a municipality is satisfied that a contravention of a by-law of the municipality passed under this Act has occurred, the municipality may make an order requiring the person who contravened the by-law or who caused or permitted the contravention or the owner or occupier of the land on which the contravention occurred to do work to correct the contravention;

AND WHEREAS section 446 of the *Municipal Act, 2001*, as amended, states that if a municipality has the authority under this or any other Act or under a by-law under this or any other Act to direct or require a person to do a matter or thing, the municipality may also provide that, in default of it being done by the person directed or required to do it, the matter or thing shall be done at the person's expense;

AND WHEREAS the Municipal Council deems expedient to adopt a by-law to regulate cross-connections for the protection of its Potable water.

NOW THEREFORE, the Municipal Council of the Corporation of the Town of Hawkesbury enacts as follows:

1. DEFINITIONS

Authorized Functions List means the list of functions and the persons authorized to carry out such functions, as outlined in Schedule "A" hereto and as amended;

Backflow means the reversal of the normal direction of the flow of water;

Backflow Preventer means a device that prevents Backflow;

Building shall have the same definition of "building" in the Ontario *Building Code Act, 1992*, as amended;

Building Code Act means the Ontario *Building Code Act, 1992*, S.O. 1992, Chapter 23, as amended;

Building Code means Ontario Regulation 350/06, as amended;

Chief Building Official means the employee or his/her designate appointed by the Council to administer and to enforce the present By-law;

Council means the Municipal Council of the Corporation of the Town of Hawkesbury;

CSA B64.10/B64.10.1 means the document entitled "Selection and installation of Backflow Preventers / Maintenance and field testing of Backflow Preventers" by the Canadian Standards Association, as amended;

Cross-connection means any actual or potential connection between a Potable water system and any source of pollution or contamination and includes any by-pass, jumper connections, removable sections of pipe, swivel or changeover devices, and any other temporary or permanent connection arrangements through which Backflow can occur;

Cross-connection survey means a report that shall include existing or recommended Backflow Preventers, assessment of the degree of hazard, cross-connections discovered, corrective measures and recommendations, and a schedule of work to be completed, and any other relevant information;

High or severe hazard means any type of cross-connection or potential cross-connection involving water that has additives or substances that, under any concentration, can create a danger to health, as outlined in Schedule "D" hereto, as amended;

Minor hazard means any type of cross-connection or potential cross-connection that involves a substance that constitutes a nuisance and that results in a reduction in only the aesthetic qualities of water, as outlined in Schedule "D" hereto, as amended;

Moderate hazard means any minor hazard connection that has a low probability of becoming a severe hazard. This category includes, but is not limited to, connections involving water where the aesthetic qualities of the water have been reduced and, under certain conditions, can create a danger to health, as outlined in Schedule "D" hereto, as amended;

Municipal Drinking Water System means the Town's system of works, excluding plumbing, that is established for the purpose of providing users of the system with drinking water and that includes:

- (a) anything used for the collection, production, treatment, storage, supply or distribution of water,
- (b) anything related to the management of residue from the treatment process or the management of the discharge of a substance into the natural environment from the treatment system, and
- (c) a well or intake that serves as the source or entry point of raw water supply for the system.

Owner means any person, firm, or corporation having control over a property to which this By-law applies;

Potable water means water safe for human consumption;

Premises isolation means isolation of the water located within a Building or structure from the Municipal Drinking Water System;

Operating Authority means the Corporation of the Town of Hawkesbury, including its employees, servants and agents, in respect of the operation, management, maintenance or alteration of the Municipal Drinking Water System.

2. GENERAL PROVISION

This By-law shall apply to all industrial, commercial, institutional and multi-residential Buildings and structures existing at the time of adoption of this By-law and new ones, except Buildings of residential occupancies within the scope of Part 9 of the Ontario *Building Code*.

3. CONTAMINATION AND BACKFLOW PREVENTION

- 3.1 No Owner shall connect, cause to be connected, or allow to remain connected to the Municipal Drinking Water System any piping, fixture, fitting, container, or appliance that, under any circumstances, might allow any untreated water, waste water, pollutant, or any other liquid, chemical, or substance to enter the Municipal Drinking Water System.
- 3.2 No Owner of a property to which this By-law applies shall fail to ensure that a Backflow Preventer is installed in every Building or structure connected to the Municipal Drinking Water System.

4. REQUIRED SURVEYS

- 4.1 A Cross-connection survey of the plumbing systems on all new industrial,

commercial, institutional, and multi-residential Buildings and structures, except Buildings of residential occupancies within the scope of Part 9 of the Ontario *Building Code*, shall be completed at the Owner's expense by the approved personnel specified in the Authorized Functions List at least once and thereafter upon notification by the Operating Authority. For existing industrial, commercial, institutional, and multi-residential buildings, a Cross-connection survey shall be completed upon request by the Operating Authority.

- 4.2 The cross-connection survey shall be completed along with a report and sent to the Operating Authority within 30 days of the date of the request or before the issuance of the partial occupancy permit.
- 4.3 A cross-connection survey may be required upon change of use or at the discretion of the Operating Authority.
- 4.4 Upon identification of high or severe hazard, the approved company or person as prescribed in the Authorized Function List and/or the Owner shall, within 24 hours, notify in writing the Operating Authority.

5. SELECTION AND INSTALLATION OF BACKFLOW PREVENTERS

The selection and installation of Backflow Preventers shall be in accordance with the Ontario *Building Code Act, 1992*.

Backflow Preventers shall be installed within the timeframe below depending to the degree of hazard:

High or severe hazard	Within 30 days from the date of identification of hazard
Moderate and minor hazard	Within 90 days from the date of identification of hazard

6. INSPECTION FOR CROSS-CONNECTIONS – ACCESS

- 6.1 The Operating Authority shall be allowed access, with reasonable notice, to any premises connected to the Municipal Drinking Water System for the purpose of performing inspections to locate possible cross-connections. The Operating Authority may request a routine cross-connection inspection of the premises to be performed at the Owner's expense by an approved company or person as described in the Authorized Functions List.

- 6.2 The Operating Authority shall be allowed access, with reasonable notice, to any premises connected to the Municipal Drinking Water System for the purpose of performing inspections to verify compliance with section 9.
- 6.3 Where the access requirements of sections 6.1 and 6.2 are not fulfilled, a written notice may be issued by the Operating Authority outlining a revised deadline for access to the premises in question. If access is not provided by this deadline, the Operating Authority may, at its discretion, shut off the supply of water to the premises until the access is provided.
- 6.4 If a condition is found to violate section 3, the Operating Authority may immediately carry out an inspection at the Owner's expense, may issue any notice required to obtain compliance with section 3 and may shut off the supply of water to the premises.

7. NOTICES AND ORDERS TO CORRECT CROSS-CONNECTIONS

If the Owner to whom the Operating Authority has issued notice fails to comply with that notice, the Operating Authority may:

- a) give further notice to the Owner to correct the fault at his/her expense within a specified time period; if the notice is not complied with, the Operating Authority may then shut off the water service and have the necessary works or repairs done at the Owner's expense;
- b) issue and order, citing unsafe conditions, in accordance with the *Ontario Building Code Act, 1992*, as amended to correct the condition that could be hazardous to the health or safety of persons in the normal use of the Building, persons outside the Building, or person whose access to the Building has not been reasonably prevented; or
- c) without notice to the Owner, shut off the water service where the Operating Authority has determined, in its sole discretion, that an immediate threat of contamination to the Municipal Drinking Water System exists that can endanger public health or safety.

8. PREMISES ISOLATION

- 8.1 Where, in the opinion of the Operating Authority, a risk of possible contamination of the Municipal Drinking Water System exists, the Owner, on notice from the Operating Authority, shall install Premises isolation in addition to any other Backflow protection devices on the premises.

- 8.2 Notwithstanding subsection 8.1, Premises isolation shall be installed:
- in Buildings of high or severe hazard in accordance with the Premises isolation requirements outlined in the Ontario *Building Code Act, 1992*; or
 - as required by the Operating Authority.

9. MAINTENACE AND FIELD-TESTING OF BACKFLOW PREVENTERS

- 9.1 Backflow Preventers shall be inspected and tested at the Owner's expense by the approved personnel specified in the Authorized Functions List to demonstrate that the devices are in proper working condition.
- 9.2 Inspection and testing of Backflow Preventers and frequency shall be done in accordance with the Schedule "B" attached hereto and reporting on the forms attached hereto as Schedule "C" or other forms acceptable to the Operating Authority.
- 9.3 Upon initial installation of Backflow Preventers, test reports shall be submitted to the Operating Authority within ten (10) days. Reports thereafter shall be made available on site for review as required by the Operating Authority and shall be kept for a period of not less than seven years.
- 9.4 When the results of the inspection and test in section 9.1 demonstrate that a Backflow Preventer is not in proper working condition, the Owner shall make all necessary repairs or replace the device within 5 days.
- 9.5 If the Owner does not make the appropriate repairs or replace the defective device within 5 days, the Operating Authority may issue a notice under section 6.4 or may shut off the water service or have the necessary works or repairs done at the Owner's expense.
- 9.6 If the Owner fails to have a Backflow Preventer tested, the Operating Authority may notify the Owner that the Backflow Preventer must be tested within a specified time.
- 9.7 If the Owner fails to have a Backflow Preventer tested within the specified time in the notice described in section 9.6 the Operating Authority may shut off the water service until the Backflow Preventer has been tested and approved as required by section 9.1 or may have it tested by an approved company or person as described in the Authorized Functions List at the Owner's expense.
- 9.8 Failure to comply with sections 9.1 to 9.5 can result in penalties as

described in section 14.

10. REMOVAL OF BACKFLOW PREVENTERS

No person shall remove a Backflow Preventer or any part thereof after it has been installed, and no Owner of a Building or structure in which a Backflow Preventer is installed shall cause or permit the removal of such a device, unless the purpose of such removal is to:

- a) facilitate the repair of the device, with the device replaced immediately after the repair is carried out;
- b) replace the device with another device that meets or exceeds the provision of this By-law; or
- c) remove a device when a fixture or equipment has been taken out of service and removed.

11. BACKFLOW TEST EQUIPMENT MAINTENANCE

Where required by the Ontario *Building Code Act, 1992* and the CSA B64.10.1, all equipment used to test Backflow Preventers shall be verified or calibrated for accuracy.

12. AUTHORIZED FUNCTIONS

Only those persons listed in the Authorized Functions List shall carry out the corresponding functions set out in such list.

13. ENFORCEMENT

This By-law shall be enforced by the Chief Building Official or any other person appointed by the Council.

14. PENALTIES

Every person who contravenes any of the provisions of this By-law is guilty of an offence and is liable to the fine provided for under the *Municipal Act, 2001*, as amended.

Every person who contravenes any of the provisions of this By-law is guilty of an offence and upon conviction thereof is liable to a minimum fine of not less than Five Hundred Dollars (\$500.00) and not more than Twenty-Five Thousand Dollars (\$25,000.00). For continuous offences, the minimum fine shall be Five Hundred Dollars (\$500.00) and not more than Ten Thousand Dollars (\$10,000.00) for each day or part of a day that the offence continues.

A director or officer of a corporation who knowingly concurs in the contravention of this By-law by the corporation is guilty of an offence and upon conviction is liable to a minimum fine of not less than Five Hundred Dollars (\$500.00) and not more than Fifty Thousand Dollars (\$50,000.00). For subsequent convictions for the same offence, the minimum fine shall be One Thousand Dollars (\$1,000.00) and the maximum fine One Hundred Thousand Dollars (\$100,000.00).

15. VALIDITY

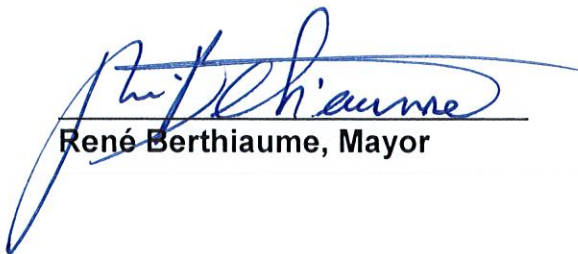
If a court of competent jurisdiction declares any provision, or any part of a provision of this By-law to be invalid, or to be of no force and effect, the provision shall be deemed conclusively to be severable from this By-law.

No part of this By-law not declared by a court of competent jurisdiction to be invalid shall be affected by the provision severable from this By-law.

16. ENACTMENT

THAT this By-law shall come into force and effect on the date of its adoption.

**READ A FIRST, SECOND AND ADOPTED UPON THIRD READING
THIS 27th DAY OF AUGUST 2012.**


René Berthiaume, Mayor


Christine Groulx, Clerk

THE CORPORATION OF THE TOWN OF HAWKESBURY
BY-LAW N° 59-2012
Schedule "A"

AUTHORIZED FUNCTIONS LIST

Item	Authorized function	Professional engineer with tester's licence	Certified engineering technologist with tester's licence*	Licensed master plumber with contractor's and tester's licence	Journeyman plumber with tester's licencet	Apprentice plumber with tester's licencet‡	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 Preventer	—	—	√	√	√	—	—
3	Repair Backflow Preventer	√	√	√	√	√	—	—
4	Test Backflow Preventer	√	√	√	√	√	—	—
5	Complete Items 1, 2, 3 and 4 in relation to fire protection systems	√	√	√	√	√	√	—
6	Complete Items 3 and 4 in relation to lawn sprinkler systems	√	√	√	√	√	—	√

* Required to be under the direction of a professional engineer.

† Required to be employed by a licensed plumbing contractor or licensed fire sprinkler contractor.

‡ Required to be employed by a licensed plumbing contractor and under the direct supervision of a journeyman plumber of master plumber.

**THE CORPORATION OF THE TOWN OF HAWKESBURY
BY-LAW N° 59-2012
Schedule "B"**

Frequency requirements

Backflow Preventers shall be inspected and tested:

- a) upon installation;
- b) when cleaned, repaired, or overhauled;
- c) when relocated;
- d) annually, and;
- e) as required by the Operating Authority.

**THE CORPORATION OF THE TOWN OF HAWKESBURY
BY-LAW N° 59-2012
Schedule "C"**

Reporting forms

Testing and inspection report						Mailing address	RP
Reduced pressure principle backflow preventer							
Location address				Occupant			
Owner of device							
Owner contact					Telephone		
Owner address						Postal code	
Name of certified tester			Tester certification number		Telephone		
Business name			Business address			Postal code	
Make of test kit		Model number		Serial number		Calibration due date	
Reduced pressure principle backflow preventer							
Make of device		Model number		Serial number		Size	
Location of device in building							
Type of test		Date of test		Shut-off valve no. 2		Line pressure	
<input type="checkbox"/> Initial <input type="checkbox"/> Annual		YY MM DD		<input type="checkbox"/> Leaked <input type="checkbox"/> Closed tight		kPa <input type="checkbox"/> psi <input type="checkbox"/>	
Test	Differential pressure relief valve		Check valve 1		Check valve 2		Test results
	<input type="checkbox"/> Failed to open <input type="checkbox"/> Opened at _____ kPa _____ psi		<input type="checkbox"/> Leaked <input type="checkbox"/> Closed tight		<input type="checkbox"/> Leaked <input type="checkbox"/> Closed tight		
			Pressure differential across first check valve (no flow) _____ kPa <input type="checkbox"/> _____ psi <input type="checkbox"/>		Pressure differential across second check valve (no flow) _____ kPa <input type="checkbox"/> _____ psi <input type="checkbox"/>		
If the device fails the test for any reason, complete this section and note repair below							
Reason for failure (if apparent)							
Repairs	Differential pressure relief valve		Check valve 1		Check valve 2		Shut-off valve 2
	1 <input type="checkbox"/> Cleaned 2 <input type="checkbox"/> Disc upper 3 <input type="checkbox"/> Disc lower 4 <input type="checkbox"/> Spring 5 <input type="checkbox"/> Diaphragm lg. 6 <input type="checkbox"/> Upper 7 <input type="checkbox"/> Lower 8 <input type="checkbox"/> Diaphragm small 9 <input type="checkbox"/> Upper 10 <input type="checkbox"/> Spacer 11 <input type="checkbox"/> Seat 12 <input type="checkbox"/> Other (describe above)		13 <input type="checkbox"/> Cleaned 14 <input type="checkbox"/> Disc 15 <input type="checkbox"/> Spring 16 <input type="checkbox"/> Guide 17 <input type="checkbox"/> Pin retainer 18 <input type="checkbox"/> Hinged pin 19 <input type="checkbox"/> Seat 20 <input type="checkbox"/> Diaphragm 21 <input type="checkbox"/> Other (describe above)		22 <input type="checkbox"/> Cleaned 23 <input type="checkbox"/> Disc 24 <input type="checkbox"/> Spring 25 <input type="checkbox"/> Guide 26 <input type="checkbox"/> Pin retainer 27 <input type="checkbox"/> Hinged pin 28 <input type="checkbox"/> Seat 29 <input type="checkbox"/> Diaphragm 30 <input type="checkbox"/> Other (describe above)		31 <input type="checkbox"/> Cleaned 32 <input type="checkbox"/> Disc 33 <input type="checkbox"/> Seat 34 <input type="checkbox"/> Other (describe above)
	<input type="checkbox"/> Failed to open <input type="checkbox"/> Opened at _____ kPa _____ psi		<input type="checkbox"/> Leaked <input type="checkbox"/> Closed tight		<input type="checkbox"/> Leaked <input type="checkbox"/> Closed tight		Re-test results <input type="checkbox"/> Passed <input type="checkbox"/> Failed
Date of re-test		YY MM DD		Pressure differential across first check valve (no flow) _____ kPa <input type="checkbox"/> _____ psi <input type="checkbox"/>		Pressure differential across second check valve (no flow) _____ kPa <input type="checkbox"/> _____ psi <input type="checkbox"/>	
Remarks							
I certify that I have tested the above device in accordance with the City of _____ Bylaw _____							
Signature registered tester				YY MM DD		Distribution White - Cross-connection control officer Canary - Certified tester Pink - Occupant or owner	
For office use only				YY MM DD			

Figure 1(b)
Sample testing and inspection report for RP backflow preventers
 (See Clause 4.3.1.)

Testing and inspection report						RP, DCVA, PVB, SRPVB				
Reduced pressure principle backflow preventer, double check valve backflow preventer, pressure vacuum breaker, and spill-resistant pressure vacuum breaker						Mailing address				
Location address			Occupant		Party contacted		Telephone number			
Owner			Address of owner		Postal code		Telephone number			
Type of device <input type="checkbox"/> RP <input type="checkbox"/> DCVA <input type="checkbox"/> PVB <input type="checkbox"/> SRPVB		Make of device		Model number		Serial number				
Location of device (i.e., building, room number)		Make of device		Size		Install date YY MM DD				
Tester's certification number		Tester's equipment number		Name of certified tester		Business name				
Location address			Occupant		Party contacted		Telephone number			
Type of test (please check one) <input type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Replacement			Line pressure at time of test _____ <input type="checkbox"/> kPa <input type="checkbox"/> psi		Pressure differential across first check valve (no flow) _____ <input type="checkbox"/> kPa <input type="checkbox"/> psi		<input type="checkbox"/> kPa <input type="checkbox"/> psi			
			Minus the opening point of relief valve _____ <input type="checkbox"/> kPa <input type="checkbox"/> psi		= Buffer _____ <input type="checkbox"/> kPa <input type="checkbox"/> psi		<input type="checkbox"/> kPa <input type="checkbox"/> psi			
Test	Reduced pressure principle backflow preventer				Differential pressure relief valve	Pressure vacuum breaker or spill-resistant pressure vacuum breaker		Test results		
	Double check valve backflow preventer		Shut-off valve 2	Check valve 1		Air inlet valve	Check valve			
Test date YY MM DD	Check valve 2	Check valve 1		Leaked <input type="checkbox"/> Leaked <input type="checkbox"/> Closed tight	With flow			Against flow	Failed to open <input type="checkbox"/> Failed to open <input type="checkbox"/> Opened at _____ psi	Failed to open <input type="checkbox"/> Failed to open <input type="checkbox"/> Opened at _____ psi
	With flow <input type="checkbox"/> Leaked <input type="checkbox"/> Closed tight	Against flow <input type="checkbox"/> Leaked <input type="checkbox"/> Closed tight	With flow <input type="checkbox"/> Leaked <input type="checkbox"/> Closed tight		Against flow <input type="checkbox"/> Leaked <input type="checkbox"/> Closed tight	Against flow <input type="checkbox"/> Leaked <input type="checkbox"/> Closed tight	Pressure drop across check valve _____ kPa _____ psi	Pressure drop across check valve _____ kPa _____ psi		
If the device fails the initial test for any reason, complete this section and note repair below										
Repairs	1 <input type="checkbox"/> Cleaned 2 <input type="checkbox"/> Replaced 3 <input type="checkbox"/> Disc 4 <input type="checkbox"/> Spring 5 <input type="checkbox"/> Guide 6 <input type="checkbox"/> Pin retainer 7 <input type="checkbox"/> Hinge pin 8 <input type="checkbox"/> Seat 9 <input type="checkbox"/> Diaphragm 10 <input type="checkbox"/> Other (describe)		20 <input type="checkbox"/> Cleaned 21 <input type="checkbox"/> Replaced 22 <input type="checkbox"/> Disc 23 <input type="checkbox"/> Seat 24 <input type="checkbox"/> Other (describe)		30 <input type="checkbox"/> Cleaned 31 <input type="checkbox"/> Replaced 32 <input type="checkbox"/> Disc 33 <input type="checkbox"/> Spring 34 <input type="checkbox"/> Guide 35 <input type="checkbox"/> Pin retainer 36 <input type="checkbox"/> Hinge pin 37 <input type="checkbox"/> Seat 38 <input type="checkbox"/> Diaphragm 39 <input type="checkbox"/> Other (describe)		50 <input type="checkbox"/> Cleaned 51 <input type="checkbox"/> Replaced 52 <input type="checkbox"/> Disc, upper 53 <input type="checkbox"/> Disc, lower 54 <input type="checkbox"/> Spring 55 <input type="checkbox"/> Diaphragm, large 56 <input type="checkbox"/> Diaphragm, small 57 <input type="checkbox"/> Upper 58 <input type="checkbox"/> Lower 59 <input type="checkbox"/> Spacer, lower 60 <input type="checkbox"/> Other (describe)		70 <input type="checkbox"/> Cleaned 71 <input type="checkbox"/> Replaced 72 <input type="checkbox"/> Vent disc 73 <input type="checkbox"/> Vent spring 74 <input type="checkbox"/> Poppet 75 <input type="checkbox"/> Retainer 76 <input type="checkbox"/> Spring 77 <input type="checkbox"/> Disc 78 <input type="checkbox"/> Guide 79 <input type="checkbox"/> Other (describe)	
	Re-test	<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 at _____ psi		<input type="checkbox"/> Leaked <input type="checkbox"/> Closed tight
Re-test date YY MM DD	Pressure drop across check valve _____ kPa _____ psi		Pressure drop across check valve _____ kPa _____ psi		Pressure drop across check valve _____ kPa _____ psi		Pressure drop across check valve _____ kPa _____ psi		Re-test results <input type="checkbox"/> Passed <input type="checkbox"/> Failed	
Remarks – reason for failure (if apparent)										
I certify that I have tested the above device in accordance with the City of Bylaw					Signature of certified tester			Date YY MM DD		
For office use only										
Distribution: White – Cross-connection control officer			Canary – Certified tester			Pink – Occupant or owner				

Figure 1(c)
Sample testing and inspection report for RP and DCVA backflow preventers and PVB and SRPVB devices
(See Clause 4.3.1.)

5 Backflow prevention device testers

To be qualified, a backflow prevention device tester shall have completed and passed a cross-connection control course in backflow preventer testing.

The tester shall ensure that his or her knowledge and expertise remain current.

Note: In Canada, the authority having jurisdiction might require that schools or colleges providing certification services demonstrate their competence by obtaining accreditation in accordance with Annex B.

**THE CORPORATION OF THE TOWN OF HAWKESBURY
BY-LAW N° 59-2012
Schedule "D"**

Guide to degree of hazard

Table B.1
Guide to degree of hazard — Point of use cross-connections
 (See Clauses 5.4.1 and B.2.)

Source of pollution or contamination	Degree of hazard
Agricultural chemical (sprayer)	Severe
Air compressor oil cooler	Moderate
Animal watering	Moderate
Aspirator (non-toxic)	Moderate
Aspirator (toxic)	Severe
Autoclave	Severe
Autopsy and mortuary equipment	Severe
Auxiliary water supply	Severe
Baptistery	Moderate
Basin	Moderate
Bathtub (all)	Moderate
Bedpan washer	Severe
Beverage dispensing equipment (no carbonator)	Minor
Beverage dispensing equipment (with carbonator)	Moderate
Bidet	Moderate to severe
Bottle washer	Moderate to severe
Bread making equipment	Minor to moderate
Canopy washers	Severe
Carwash	Severe
Chemical feed tank	Severe
Chiller tank (closed, no chemicals)	Moderate to severe
Chiller tank (open or with chemicals)	Severe
Chlorinator	Severe
Clothes washer (residential)	Moderate
Condensate tank	Severe
Condensate tank (top feed)	Moderate
Cooking kettle (for food only)	Minor
Cooling condenser, AC unit (solenoid downstream)	Severe
Cooling condenser, AC unit (solenoid upstream)	Minor
Cooling tower	Severe
Cuspidor	Severe
De-aerator (bottom feed)	Severe
De-aerator (top feed)	Moderate
Degreasing equipment	Severe

(Continued)

Table B.1 (Continued)

Source of pollution or contamination	Degree of hazard
Dental delivery system (water supply)	Minor
Dental vacuum pump	Severe
Detergent dispenser	Severe
Dipper well in ice cream parlour or restaurant	Moderate
Dish rinse unit with flex hose	Moderate
Dishwasher (commercial)	Moderate
Dishwasher (residential)	Moderate
Distiller	Minor
Dockside marine facility	Severe
Emergency eyewash/shower	Eyewash/shower to be installed upstream
Flexible shower head with hose	Minor to severe
Floor drain with flushing rim	Severe
Flush tank	Moderate
Flushing equipment device	Severe
Flushometer	Severe
Fountain, ornamental	Moderate to severe
Fountain, ornamental (chemicals added)	Severe
Fume hood	Severe
Garbage can washer	Severe
Garbage disposal unit	Severe
Heat exchanger (see Annex F and Clause 5.10)	Minor to severe
Hose connection (other than residential)	Moderate to severe
Hose connection (residential)	Minor to moderate
Hospital (active treatment area)	Severe
Hospital (non-treatment area)	Moderate
Hot tub or spa	Moderate
Hot water systems (all types — direct heating of water supply) (see Annex F and Clause 5.10)	Minor
Humidifier	Moderate
Humidifier with sump (chemicals added)	Severe
Hydrotherapy bath	Moderate
Ice machine for commercial restaurant	Moderate to severe
Ice making equipment for sports arena	Severe
Industrial fluid system	Severe
Irrigation system (chemicals injected)	Severe
Irrigation system (no chemicals injected)	Moderate

(Continued)

Table B.1 (Continued)

Source of pollution or contamination	Degree of hazard
Lab bench equipment (non-toxic)	Minor
Lab bench equipment (toxic)	Severe
Lab faucet	Moderate to severe
Laboratory	Severe
Laundry machine	Moderate
Lavatory	Moderate
Lethal substance	Severe
Livestock equipment	Severe
Mixing tee with steam and water	Moderate
Mortuary or morgue	Severe
Non-potable water	Severe
Optician or ophthalmology equipment	Minor to moderate
Pedicure chair	Moderate to severe
Photo lab sink	Severe
Pipette washer	Severe
Piping to chemical dispensers	Minor to severe
Plating tank	Severe
Potato peeler	Moderate
Poultry barn	Severe
Pressure washer (no aspirator)	Minor
Pressure washer (with aspirator)	Severe
Private fire hydrants	Moderate
Private water source	Severe
Pump primer line (non-toxic)	Moderate
Pump primer line (toxic)	Severe
Radiator flushing equipment	Severe
Restricted area	Severe
Residential reverse osmosis equipment	Minor
Reverse osmosis equipment with backwashing	Moderate
Reverse osmosis equipment with chemical cleaning	Severe
Serrated faucets	Severe
Sewage ejectors	Severe
Sewage pump	Severe
Shampoo sinks	Moderate
Sizing vats	Severe

(Continued)

Table B.1 (Concluded)

Source of pollution or contamination	Degree of hazard
Solar hot water systems (residential — no chemicals added) (see Annex F and Clause 5.10)	Minor to moderate
Solar hot water systems (residential — relatively harmless heat transfer fluid) (see Annexes F, G and Clause 5.10)	Minor to moderate
Solar hot water systems (residential — toxic heat transfer fluid) (see Annexes F, G and Clause 5.10)	Severe
Solar hot water systems (commercial — single wall heat exchangers) (see Annex F and Clause 5.10)	Moderate to severe
Solar hot water systems (all types — double walled heat exchangers) (see Annex F and Clause 5.10)	Minor
Solar hot water systems (make-up water connection to the heat transfer fluid piping loop) (see Annex F and Clause 5.10)	Minor to severe
Solution tanks	Severe
Spa or hot tub	Moderate
Specimen tank	Severe
Steam boiler	Severe
Steam cleaner	Moderate
Steam generator	Moderate
Steam table	Minor to moderate
Sterilizer (condensate cooling only)	Moderate
Sterilizer (connection into chamber)	Severe
Still	Minor
Swimming pool (direct connection)	Moderate
Swimming pool (other than residential)	Moderate
Swimming pool (residential)	Minor
Swimming pool makeup tank	Moderate
Teeth cleaning equipment (veterinary type)	Moderate
Trap primer	Severe
Vending machine with no carbonators	Minor
Wash rack	Severe
Wash tank	Moderate
Wash tanks (toxic)	Severe
Water closet (flushometer type)	Moderate
Water closet (tank type)	Moderate
Water hauling equipment (see Annex C)	Severe
Water softener (residential)	Minor
Water softener drain (residential)	Moderate
Wok table (for Oriental cooking) with submerged inlet	Moderate
X-ray equipment	Severe

Table B.2
Guide to degree of hazard — Premises
 (See Clauses 5.3.1.2, 5.3.4.2, 5.3.4.3, and B.2.)

Type of building or facility	Degree of hazard
Airport	Moderate
Animal feed lot	Moderate to severe
Animal stock yard	Moderate to severe
Apartment building	Moderate
Aquaculture farm	Severe
Aquarium (public)	Severe
Arena	Moderate
Asphalt plant	Severe
Auto body shop	Severe
Auto dealership	Moderate
Automotive repair	Severe
Automotive repair shop	Severe
Beverage processing plant (includes distillery and brewery)	Severe
Blood clinic	Severe
Campsite	Moderate
Campsite with RV hook-ups or dump-stations	Severe
Carwash	Severe
Chemical plant	Severe
Church	Minor to moderate
College	Moderate
Commercial premises	Moderate to severe
Concrete plant	Severe
Dental office	Moderate
Dental surgery facility	Severe
Dock and marine facility	Severe
Dry cleaning plant	Severe
Duplex housing with shared service	Minor
Dye plant	Severe
Exhibition ground	Severe
Farm	Moderate to severe
Film processing facility	Severe
Fire station	Moderate to severe
Fish farms or hatchery	Severe
Food processing plant	Severe
Fuel dispensing facility	Moderate

(Continued)

Table B.2 (Continued)

Type of building or facility	Degree of hazard
Funeral home	Moderate to severe
Garbage transfer facility	Severe
Golf course	Moderate to severe
Grocer	Moderate
Hair salon	Moderate
Hospital	Severe
Hotel	Moderate
Industrial and institutional premises	Moderate to severe
Kennel	Moderate
Laboratory	Severe
Laundry (commercial)	Severe
Laundry (commercial, coin-operated)	Moderate
Manufacturing plant (not specified)	Moderate
Marina (pleasure-boat)	Moderate to severe
Meat packing plant	Severe
Medical clinic (non surgical)	Moderate
Medical clinic (surgical)	Severe
Milk processing plant	Severe
Mining facility	Severe
Mobile home park	Moderate
Mortuary or morgue	Severe
Motel	Moderate
Motorcycle repair facility	Severe
Multi-service interconnected facility	Moderate
Multi-tenant single-service facility	Moderate
Nursing home	Moderate
Office building	Moderate
Oil refinery	Severe
Paint manufacturing plant	Severe
Penitentiary	Moderate
Petroleum processing or storage facility	Severe
Pharmaceutical manufacturing facility	Severe
Photo processing facility	Severe
Plants using radioactive material	Severe
Plastic manufacturing plant	Severe

(Continued)

Table B.2 (Concluded)

Type of building or facility	Degree of hazard
Plating shop and plant	Severe
Poultry farm	Severe
Power generating facility	Severe
Premises where access is prohibited or restricted	Severe
Printing plant	Severe
Pulp and/or paper plant	Severe
Radiator shop	Severe
Recycling facility	Severe
Refinery, petroleum processing	Severe
Rendering facility	Severe
Research building	Severe
Residential premises	Minor
Restaurant	Moderate
School (elementary, junior high, and senior high)	Moderate
Sewage dump station	Severe
Sewage treatment plant	Severe
Shopping mall	Moderate
Steam plant	Severe
Steel manufacturing plant	Severe
Swimming pool facility	Moderate
Townhouse (shared services)	Minor
Trackside facility for trains	Severe
University	Moderate to severe
Veterinary clinic	Moderate to severe
Waste disposal plant	Moderate to severe
Wastewater facility	Severe
Wastewater pump station	Severe
Wastewater treatment plant	Severe
Water filling station	Severe
Water park	Moderate
Water treatment plant	Severe
Water treatment pump station	Severe
Zoo	Severe