

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (2008) - 18660

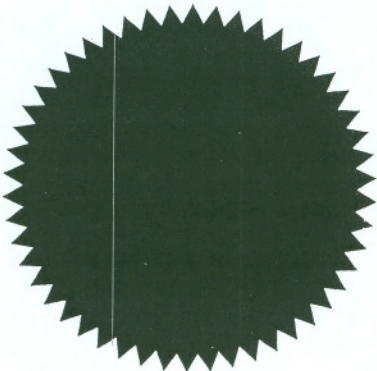
A By-law to amend By-law Number (1991)-13791, being a By-law to regulate the supply of water in the City of Guelph, by amending Schedule 'A' of the By-law respecting backflow prevention, and to adopt Municipal Code Amendment #474 which amends Chapter 291, Article I of the Corporation of the City of Guelph's Municipal Code.

THE COUNCIL OF THE CORPORATION OF THE CITY OF GUELPH ENACTS AS

FOLLOWS:

1. Schedule A of By-law Number (1991)-13791 and Chapter 291-30, Article I of the Corporation of Guelph's Municipal Code are hereby repealed and replaced with the Schedule "A" as attached hereto.
2. This By-law is hereby adopted as Municipal Code Amendment #474.

PASSED this TWENTY-SEVENTH day of OCTOBER, 2008




KAREN FARBRIDGE - MAYOR


LOIS A. GILES - CITY CLERK

SCHEDULE “A”

of By-law Number (2008)-18660 being new Schedule “A” to By-law Number (1991)-13791

1. SHORT TITLE

1.0 This Schedule may be cited as the “*Backflow Prevention Regulations*”.

2. INTERPRETATION

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

“*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 Schedule;

“*auxiliary water supply*” means, when applied to any premises, any water supply on or available to the premises other than the primary *potable water* supply for the premises;

“*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* certified to the *CSA Standard*;

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

“*City*” means the Corporation of the City of Guelph 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 control survey form*” means a form acceptable to the *City* containing information related to the types of *cross connections* and the method of protecting those *cross connections* within any *building* or *structure*. The form must also contain *owner* and contact information for the *property*;

“*CSA Standard*” means the document entitled *B64.10-07/B64.10.1-07 Selection and installation of backflow preventers/Maintenance and field testing of backflow preventers* published in 2007 by the Canadian Standards Association, or any successor thereof;

“*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*;

“*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;

“*property*” means any land within the City of Guelph and includes all *buildings* or *structures*;

“*qualified person*” means a person who is employed by a company that is licensed as a tester of *backflow prevention devices* under the *City’s* Licensing By-law (2004)-17551, or any successor thereof;

“*Selection Guide*” means the *Backflow Prevention Device Selection Guide* as set out in Appendix “B” of this Schedule;

“*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*;

“*test report*” means a *test report* acceptable to the *City* containing information related the *qualified person’s* name, certification number, employer name, contact information, serial number of test kit and last calibration date of test kit. The test report must also contain the make, model, serial number, size, type, location, purpose, installation address and test results of the *backflow prevention device*. The form must also contain *owner*, occupant and contact information for the *property*;

“*test tag*” means a tag acceptable to the *City* containing information related to the make, model, serial number, size, type, location, purpose, installation address and test history of the *backflow prevention device*;

“*untreated water*” means any water not subject to the requirements of the Safe Drinking Water Act, and/or water that is not under the direct control of the Water Purveyor;

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

3. APPLICATION OF SCHEDULE

3.0 This Schedule applies to existing industrial, commercial, institutional and multi-residential *buildings* and *structures*, except *buildings* of residential occupancies as described in Division A, Article 1.1.2.4. of Ontario Regulation 350/06 (the Ontario Building Code) or any successor thereof.

3.1 In addition to and notwithstanding section 3.0 of this Schedule, this Schedule applies where a condition exists in any *building* or *structure* that may be hazardous or detrimental to the *potable water* supply.

4. CROSS CONNECTION PROHIBITED

4.0 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 *untreated water*, waste water or any other liquid, chemical or substance to enter such supply or system, except in compliance with the provisions of this Schedule.

4.1 In addition to section 4.0 and in accordance with all other provisions of this Schedule, every *owner* of *property* to which this Schedule 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* supply exists.

4.2 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* without written approval from the *City*.

5. PERSONS PERMITTED TO CARRY OUT WORK

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

6. APPLICATION OF CSA STANDARD

6.0 Except as otherwise set out in this Schedule, the installation, maintenance and field testing of *backflow prevention devices* shall be in accordance with the *CSA Standard*.

6.1 Wherever the *CSA Standard* and this Schedule are in conflict, the provisions of this Schedule shall prevail.

7. SELECTION OF BACKFLOW PREVENTION DEVICES

7.0 Every *owner* of a *building* or *structure* of a type set out in section 3 of this Schedule shall, every five years or as otherwise required by the *City*, 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:

7.0.1 shall ensure that such survey is carried out on a *cross connection control survey form* by a person permitted to do so pursuant to the *Authorized Functions List*; and

7.0.2 shall ensure that the completed *cross connection control survey form* is provided to the *City* within 14 days of the survey being conducted.

7.1 Every *owner* shall ensure that every *backflow prevention device* required for *premise isolation* on their *property* is a testable device and is the proper device to be used pursuant to section 7.2 of this Schedule.

7.2 *Backflow prevention devices* for *premise*, *source* or *zone isolation* shall be determined:

7.2.1 using the *Selection Guide*; or

7.2.2 when the type of *cross connection* is not identified in the *Selection Guide*, by the *City*;

7.3 Despite section 7.2 of this Schedule, the *City* may require or permit a particular *backflow prevention device* to be used in respect of any *cross connection*.

7.4 Despite section 7.2 of this Schedule, the *City* may permit an existing *backflow prevention device* if previously approved and as long as the safety of the water supply is maintained to the satisfaction of the *City* in its sole discretion.

7.5 Despite section 7.2. of this Schedule, where a *source isolation backflow prevention device* has been installed by the manufacturer of the 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 control survey form*.

8. INSTALLATION OF BACKFLOW PREVENTION DEVICES

8.0 Every person installing a *backflow prevention device* shall ensure that:

8.0.1 such device is installed in accordance with manufacturers specifications and the requirements of the *CSA Standard*;

- 8.0.2 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;
 - 8.0.3 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 *City*;
 - 8.0.4 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"; and
 - 8.0.5 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".
- 8.1 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.

9. TESTING OF DEVICES

- 9.0 Every *owner* who has a *backflow prevention device* located on his or her *property* shall ensure that:
- 9.0.1 such device is tested by a *qualified person* when it is first installed and annually thereafter or when requested by the *City* and also when it is cleaned, repaired, overhauled or relocated;
 - 9.0.2 a *test report* is provided to the *City* within 14 days of the test being conducted;
 - 9.0.3 in the event that such device is malfunctioning or otherwise not in proper working order, the device is immediately repaired or replaced; and
 - 9.0.4 in the event that the water supply to the device cannot be shut down in order to facilitate annual testing, a by-pass shall be installed around the device with a suitable *backflow prevention device* installed in the by-pass to allow for annual testing of both devices.
- 9.1 Every person who tests a *backflow prevention device* shall carry out such testing in accordance with this Schedule, the *CSA Standard* and all applicable legislation.
- 9.2 Every person who tests a *backflow prevention device* shall:
- 9.2.1 provide a legible *test report* to the *owner* in respect of such test;
 - 9.2.2 upon completing such test, complete and affix a *test tag* to the device or immediately adjacent to the device on the piping connected thereto; and
 - 9.2.3 upon finding that such device is malfunctioning or otherwise not in proper working order, immediately notify the *owner* of the premise and the *City* of such condition in writing.

10. INSPECTIONS

- 10.0 The *City* may, at any reasonable time, enter onto any *property, building* or *structure* to inspect for compliance with this Schedule.

10.0.1 When carrying out an inspection pursuant to section 10.0, the *City* may:

- (a) require the production for inspection of documents or things relevant to the inspection;
- (b) inspect and remove documents or things relevant to the inspection for the purpose of making copies or extracts;
- (c) require information from any person concerning a matter related to the inspection; and
- (d) make examinations or take tests, samples or photographs necessary for the purposes of the inspection.

10.1 Where an *owner* does not comply with any provision of this Schedule, the *City* may:

10.1.1 order the *owner* to comply with the Schedule requirements, and in so doing, shall provide reasonable particulars of the *owner's* non-compliance and prescribe the time period for compliance with such Order;

10.1.2 shut off the water supply to the *property* or any portion thereof until such time as all provisions of this Schedule are met.

11. GENERAL PROVISIONS

11.0 In addition to any other provision of this Schedule, the *City* 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*.

11.1 Appendices "A" & "B" shall form part of this Schedule.

APPENDIX "A"
to SCHEDULE "A" of City of Guelph
By-law Number (2008)-18660

AUTHORIZED FUNCTIONS LIST

ITEM	FUNCTION	Licensed Plumber with Contractor and Tester's License	* Journeyman Plumber with Tester's License	** Apprentice Plumber with Tester's License	Fire System Sprinkler Fitter with a Tester's License	Lawn Irrigation System Installer with Tester's License
1	Carry out <i>Cross Connection Control Survey</i>	✓	✓			
2	Install, Relocate or Replace <i>Backflow Prevention Device</i>	✓	✓	✓		
3	Repair of <i>Backflow Prevention Device</i>	✓	✓	✓	✓	
4	Test <i>Backflow Prevention Device</i>	✓	✓	✓	✓	
5	Items 1, 2, 3 & 4 above in Respect of Fire Protection Systems	✓	✓	✓	✓	
6	Items 2 (up to 1"), 3 & 4 above in Respect of Lawn Sprinkler Systems	✓	✓	✓		✓

* 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.

APPENDIX “B”

**to SCHEDULE “A” of City of Guelph
By-law Number (2008)-18660**

BACKFLOW PREVENTION DEVICE SELECTION GUIDE

INTERPRETATION

In addition to those terms defined in section 2.0 of Schedule “A”, the following terms shall have the corresponding meanings for the purposes of this Appendix:

“air gap (AG)” means the unobstructed vertical distance through air between the lowest point of the water supply outlet and the flood level rim of the fixture or device into which the outlet discharges;

“back siphonage” means *backflow* caused by pressure below atmospheric in the supply system;

“double check valve assembly (DCVA)” means a *backflow prevention device* consisting of two force-loaded, independently acting check valves, including tightly closing resilient-seated shutoff valves located at each end of the assembly and fitted with properly located resilient-seated test cocks. This device is designed for use under continuous pressure;

“dual check valve (DuC) “ means a *backflow prevention device* consisting of two independently acting, force-loaded, soft-seated check valves in series. This device does not have a relief port or test cocks. This device is designed for use under continuous pressure;

“dual check valve with atmospheric port (DCAP), (DCAPC)” means a *backflow prevention device* that consists of two independently acting check valves separated by an intermediate chamber with an atmospheric port. A chamber pressure higher than the supply pressure is required to open the port when there is a positive pressure on the supply side. This device is designed for use under continuous pressure; (DCAPC) is specifically designed for use in carbonated beverage dispensing machines.

“dual check valve with intermediate vent (DuCV)” means a *backflow prevention device* that consists of two independently acting check valves biased to a normally closed position. Between the check valves there is a relief port that is biased to a normally open position. This device is designed for use under continuous pressure;

“reduced pressure principle assembly (RP)” means a *backflow prevention device* that consists of a mechanically independently acting, hydraulically dependent relief valve located in a chamber between two independently operating, force-loaded check valves, the intermediate chamber pressure always being lower than the supply pressure when there is a positive pressure on the supply side. The unit includes properly located resilient-seated test cocks and tightly closing resilient-seated shutoff valves at each end of the assembly. This device is designed for use under continuous pressure;

“minor hazard” means any *cross connection* or potential *cross connection* that constitutes only a nuisance, with no possibility of any health hazard;

“moderate hazard” means any minor hazard that has a low probability of becoming a severe hazard;

“severe hazard” means any *cross connection* or potential *cross connection* involving any substance that could be a danger to health;

“single check valve” (SCVAF) means a *backflow preventer* that consists of one force-loaded, independently acting check valve, including resilient-seated shut-off valves located at each end of the SCVAF *backflow preventer* and fitted with resilient-seated test cocks. SCVAF *backflow preventers* are designed for use under continuous pressure on fire sprinkler and standpipe systems.

“vacuum breaker” means a device that will prevent *backflow* when pressure in the system upstream of the device falls below atmospheric pressure. Air is only admitted downstream of the device;

“vacuum breaker, atmospheric type (AVB)” means a vacuum breaker designed to be under pressure only when water is being drawn from the system and for short, intermittent periods of time;

“vacuum breaker, hose connection type (HCVB), (HCDVB)” means a vacuum breaker consisting of a single or double force-loaded check valve biased to a normally closed position. Downstream of the check valve is a means of automatically venting to atmosphere that is force-loaded or biased to a normally open position. If there is no flow through the device, the check valve is closed and the vent is open. The device is designed to be under pressure only when water is being drawn from the system and for short, intermittent periods of time;

“vacuum breaker, laboratory faucet type (LFVB)” means a vacuum breaker consisting of two independently acting check valves force-loaded or biased to a normally closed position. Between the check valves there is a relief port that is force-loaded or biased to a normally open position. When the laboratory faucet is off, the check valves are closed and the port is open; when the faucet is on, the check valves are open and the port is closed; and

“vacuum breaker, pressure type (PVB)” or “spill resistant pressure type (SRPVB)” means an assembly containing an independently acting check valve force-loaded or biased, to a normally closed position, and an independently operating air inlet valve force-loaded or biased to a normally open position and located on the discharge side of the check valve. The assembly is equipped with properly located resilient-seated test cocks and tightly closing resilient-seated shutoff valves located at each end of the assembly. The device is designed for use under continuous pressure;

BACKFLOW PREVENTION GUIDE TO DEGREE OF HAZARD

Type of Cross Connection	Degree of Hazard	Type of Cross Connection	Degree of Hazard
Agricultural chemicals (sprayers)	Severe	Garbage disposal unit	Severe
Air compressor oil cooler	Moderate	Garbage can washer	Severe
Animal watering	Moderate	Heat Exchanger	Moderate to Severe
Aspirator (toxic)	Severe	Heating System (copper/plastic; no chemicals)	Minor
Aspirator (non-toxic)	Moderate	Heating System (no chemicals added)	Moderate
Autoclave	Severe	Heating System (chemicals added)	Severe
Autopsy and mortuary equipment	Severe	Heating System (single family dwelling)	Moderate
Auxiliary water supply	Severe	Hose bib, sediment faucet	Minor to Severe
Baptistery	Moderate	Hose bib, sediment faucet, connected to high hazard	Severe
Basin	Moderate	Hose bib, sediment faucet (residential)	Minor to Moderate
Bathtub (all)	Moderate	Humidifier	Moderate
Bedpan washer	Severe	Humidifier with sump	Severe
Beverage dispensing equipment (no carbonator)	Minor	Hydrotherapy bath	Moderate
Beverage dispensing equipment (with carbonator)	Moderate	Ice Machine for commercial restaurant	Moderate to Severe
Bidet	Moderate to Severe	Ice making equipment for sports arena	Severe
Bottle washer	Moderate to Severe	Industrial fluid system	Severe
Bread making equipment	Minor to Moderate	Irrigation system (chemical injected)	Severe
Canopy washer	Severe	Irrigation system (no chemical added)	Moderate
Chemical feed tank	Severe	Lab bench equipment (toxic)	Severe
Chiller tank (no chemical)	Moderate to Severe	Lab bench equipment (non toxic)	Minor
Chiller tank (with chemical)	Severe	Laboratory	Severe
Chlorinator	Severe	Laboratory Faucet	Moderate to Severe
Clothes washer (residential)	Moderate	Laundry, commercial coin-operated	Moderate
Coffee machine	Minor	Laundry machine, commercial	Moderate
Condensate tank (top feed)	Moderate	Laundry machine, residential	Minor
Condensate tank	Severe	Laundry tub faucet with hose bib connection	Moderate
Cooking kettle	Minor	Lavatory	Moderate
Cooling condenser (solenoid upstream)	Minor	Lethal substance	Severe
Cooling condenser (solenoid downstream)	Severe	Livestock equipment	Severe
Cooling tower	Severe	Mixing tee with steam and water	Moderate
Deaerator (top feed)	Moderate	Mop sink faucet with hose bib connection	Moderate
Deaerator (bottom feed)	Severe	Mortuary or Morgue	Severe
Degreasing equipment system	Severe	Non-potable water	Severe
Deionized water	Severe	Optician or Ophthalmology equipment	Minor to Moderate
Dental Vacuum pump	Severe	Photo lab sink	Severe
Dental Cuspidor (with internal air gap)	Minor	Pipette washer	Severe
Dental Cuspidor (no air gap)	Severe	Piping to chemical dispensers	Minor to Severe
Dental Delivery system	Minor	Plating tank	Severe
Detergent dispenser	Severe	Potato peeler	Moderate
Dipper well in ice-cream parlour or restaurant	Moderate	Poultry barn	Severe
Dish rinse unit with flex hose	Moderate	Pressure washer (no aspirator)	Minor
Dishwasher (commercial)	Moderate	Pressure washer (with aspirator)	Severe
Dishwasher (residential)	Minor to Moderate	Private fire hydrant	Moderate
Distiller	Minor	Private water source	Severe
Dockside Marine Facility	Severe	Pump primer line (toxic)	Severe
Dry sprinkler or standpipe system	Moderate	Pump primer line (non-toxic)	Moderate
Fire Hydrant	Moderate	Radiator flushing equipment	Severe
Flexible shower head with hose	Minor to Severe	Restricted area	Severe
Floor drain with flushing rim	Severe	Reverse osmosis	Minor
Flush tank	Moderate	Reverse osmosis with backwashing	Moderate
Flushing equipment device	Severe	Reverse osmosis with chemical cleaning	Severe
Flushometer	Severe	Serrated faucet	Severe
Fountain, ornamental	Moderate to Severe	Sewage ejector	Severe
Fountain, ornamental (chemical added)	Severe	Sewage pump	Severe
Fume hood	Severe	Shampoo sink	Moderate

BACKFLOW PREVENTION GUIDE TO DEGREE OF HAZARD

Type of Cross Connection	Degree of Hazard	Type of Cross Connection	Degree of Hazard
Sizing vat	Severe	Wash rack	Severe
Solar energy unit	Severe	Wash tank	Moderate
Solution tank	Severe	Wash tank (toxic)	Severe
Spa or hot tub	Moderate	Water closet (tank type)(N/A if constructed after 1995)	Moderate
Specimen tank	Severe	Water closet (flushometer type)	Moderate
Steam table	Minor to Moderate	Water hauling equipment (non-toxic)	Moderate
Steam generator	Moderate	Water hauling equipment (toxic)	Severe
Steam cleaner	Moderate	Water softener, commercial	Minor
Sterilizer (condensate cooling only)	Moderate	Water softener drain	Severe
Sterilizer (connection into chamber)	Severe	Wok table (for oriental cooking with submerged inlet)	Moderate
Still	Minor	X-ray equipment	Severe
Swimming pool (residential)	Minor		
Swimming pool (other than residential)	Moderate		
Swimming pool (direct connection)	Moderate		
Swimming pool makeup tank	Moderate		
Teeth cleaning equipment (veterinary type)	Moderate		
Trap primer	Severe		
Vending machine with no carbonators	Minor		

Emergency eyewash/Shower - this equipment must be installed upstream of all zone and source isolation

Fire Protection Systems - General Conditions

- Antifreeze solutions must be water solutions of pure glycerin (C.P. or U.S.P., 96.5% grade) OR propylene glycol conforming to Section 3-5.2.1 of NFPA-13, 1994 Edition. These are best described as food-grade chemicals.
- Antifreeze solutions must be **tested** to verify compliance with above conditions. Any other antifreeze solution is NOT permitted and must be replaced
- Expansion chambers shall be of an appropriate size to compensate for thermal expansion of antifreeze solution.
- An adequate amount of piping before or after the location of any *backflow prevention device* shall be increased in size to compensate for the pressure loss created by the device being installed. The flows are to be in accordance with NFPA-13 for the appropriate hazard classification in the area downstream of the *backflow prevention device*.

Table 7.6.2.4
Backflow Prevention Devices on fire Sprinkler and Standpipe Systems
Forming Part of Sentences 7.6.2.4.(2)

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
CSA Standard Number	Type of Device (1)	System made with Potable Water System Materials	System made with Potable Water System Materials	System Not Made with Potable Water System Materials	System Not Made with Potable Water System Materials
		Minor Hazard(2) Residential Partial Flow-Through System	Minor Hazard(2) Class 1 System	Moderate Hazard(2) Class 1, 2, 3 and 6 Systems	Severe Hazard(2) – Any Class of System in which Antifreeze or Other Additives are used
B64.6.1	DuC	P	NP	NP	NP
B64.9	SCVA	P	P	NP	NP
B64.5.1	DCVA	P	P	P	NP
B64.4.1	RP	P	P	P	P

Notes to Table 7.6.2.4.:

P - Permitted

NP – Not Permitted

(1)– The product is only permitted for use on fire sprinkler and standpipe systems.

(2) – Minor Hazard, Moderate Hazard and Severe Hazard have the same meaning as indicated in Can/CSA-B64.10 “Manual for the Selection and Installation of *Backflow Prevention Devices*”.

BACKFLOW PREVENTION GUIDE TO DEGREE OF HAZARD – PREMISE ISOLATION

Type of Building	Degree of Hazard	Type of Building	Degree of Hazard
Abattoir (slaughter house)	Severe	Paint manufacturing plant	Severe
Airport	Moderate	Penitentiary	Moderate
Animal feed lot	Moderate to Severe	Petroleum processing or storage facility	Severe
Animal stock yard	Moderate to Severe	Pharmaceutical manufacturing facility	Severe
Apartment <i>building</i> (within the scope of Part 3 of the Ontario Building Code)	Moderate	Photo processing facility	Severe
Aquaculture farm	Severe	Plant using radioactive material	Severe
Aquarium (public)	Severe	Plastic manufacturing plant	Severe
Arena	Moderate	Plating shop	Severe
Asphalt plant	Severe	Poultry farm	Severe
Auto body shop	Severe	Power generating facility	Severe
Auto dealership	Moderate	Premise where access prohibited	Severe
Automotive Plant	Severe	Printing plant	Severe
Automotive repair shop	Severe	Pulp and/or paper plant	Severe
Beverage processing plant	Severe	Radiator shop	Severe
Blood clinic	Severe	Recycling facility	Severe
Camp site	Moderate	Refinery, petroleum processing	Severe
Camp site with RV hookups or dump station	Severe	Rendering facility	Severe
Car wash	Severe	Research <i>building</i>	Severe
Church	Moderate	Residential premises-multi-tenant	Moderate
College	Moderate	Restaurant	Moderate
Commercial premises	Moderate to Severe	School	Moderate
Concrete plant	Severe	Sewage dump station	Severe
Dental office	Moderate	Sewage treatment plant	Severe
Dental surgery facility	Severe	Steam boiler plant	Severe
Dockside marine facility	Severe	Steel manufacturing plant	Severe
Dry cleaning plant	Severe	Storage Warehouse	Moderate
Dry cleaning facility (no dry cleaning process on premise)	Moderate	Swimming pool facility	Moderate
Duplex housing with shared service	Minor	Technical institute	Moderate
Dye plant	Severe	Townhouse (shared service)	Minor
Exhibition ground	Severe	Track-side facilities for trains	Severe
Farm	Moderate to Severe	University	Moderate to Severe
Film processing facility	Severe	Veterinary clinic	Moderate to Severe
Fire Service main connected to more than one of the following different sources of supply: (i) City water supply system (ii) a private water supply system or (iii) a source of non-potable water	Moderate to Severe	Veterinary clinic (special equipment)	Severe
Fire station	Moderate to Severe	Waste disposal	Severe
Fish farm or hatchery	Severe	Waste water facility	Severe
Food processing plant	Severe	Waste water pump station	Severe
Fuel dispensing facility	Moderate	Waste water treatment plant	Severe
Funeral Home	Moderate to Severe	Water filling station	Severe
Garbage transfer facility	Severe	Water park	Moderate
Golf course	Moderate to Severe	Water treatment plant	Severe
Grocer	Moderate	Water treatment pump station	Severe
Hair salon	Moderate	Zoo	Severe
Hospital	Severe		
Hotel	Moderate		
Industrial and Institutional	Moderate to Severe		
Kennel	Moderate		
Laboratory	Severe		
Laundry (commercial)	Severe		
Laundry (commercial, coin-operated)	Moderate		
Mall – multi-tenant	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		
Motor cycle repair facility	Severe		
Nursing Home	Moderate		
Office <i>Building</i>	Moderate		
Oil Refinery	Severe		

Selection Guide for Backflow Preventers

		<u>Degree of Hazard</u>			
Type of Device	CSA Standard Designation	Minor	Moderate	Severe	Device Under Continuous Pressure
Air gap	--	✓	✓	✓	No
AVB	B64.1.1	✓	✓	✓*	No
DCAP	B64.3	✓	✓†	--	Yes
DCAPC	B64.3.1	✓	✓	--	Yes
DCVA	B64.5	✓	✓	--	Yes
DuC	B64.6	✓	--	--	Yes
DuCV	B64.8	✓	✓†	--	Yes
HCDVB	B64.2.1.1	✓	✓†	✓*	No
HCVB	B64.2	✓	✓†	✓*	No
LFVB	B64.7	✓	✓†	✓*	No
PVB	B64.1.2	✓	✓	✓	Yes
RP	B64.4	✓	✓	✓	Yes
SRPVB	B64.1.3	✓	✓	✓	Yes

*When the recommended *backflow* preventer is used for this degree of hazard, zone protection with an RP *backflow* preventer or an *air gap* shall also be required.

†When the recommended device is used for this degree of hazard, zone or area protection with a DCVA *backflow* preventer, RP *backflow* preventer, or an *air gap* shall also be required.