BUILDING PERFORMANCE

Drinking Water Protection Conference 2023
From the source to the last flowing tap

Plumbing and drainage 2023 Building code update

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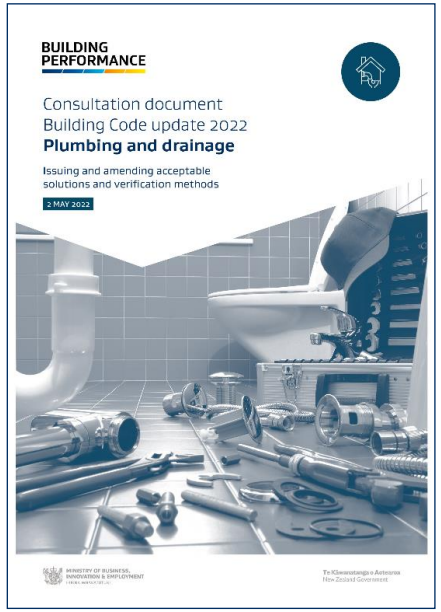
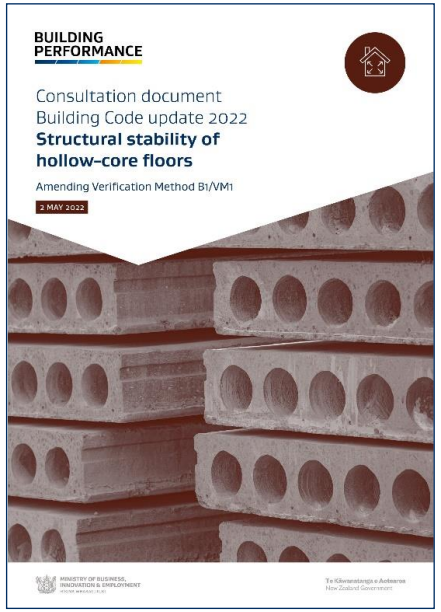
MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

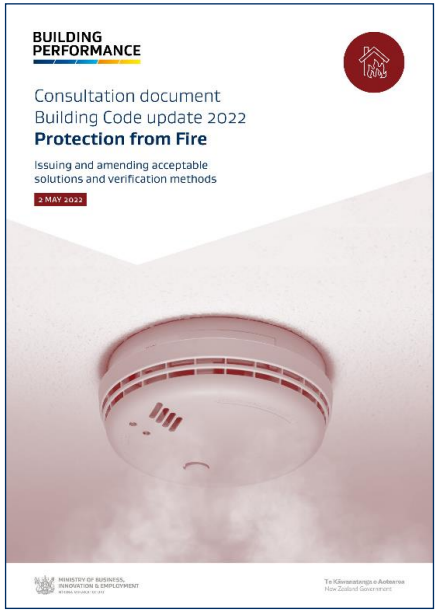
Te Kāwanatanga o Aotearoa
New Zealand Government

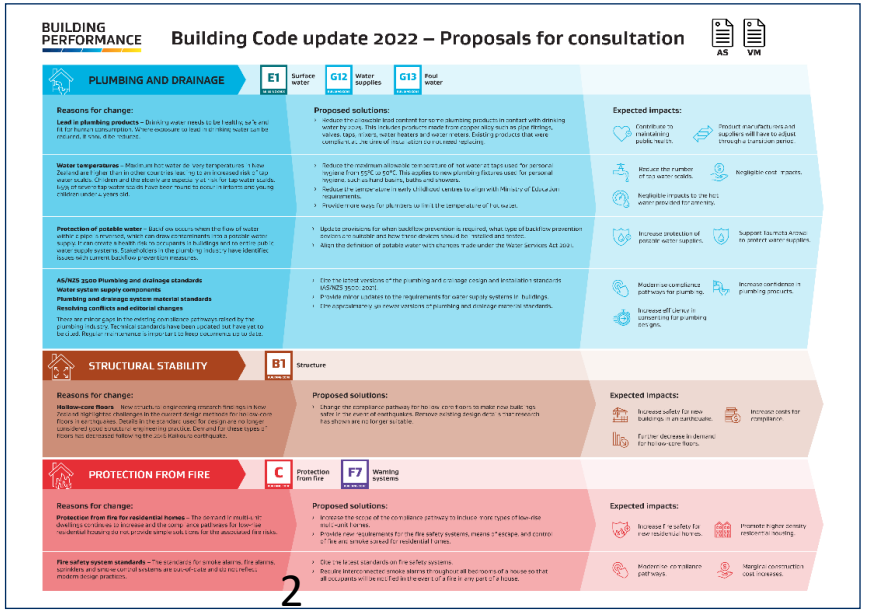
2022 Building code update consultation

1. Plumbing and drainage
2. Structural stability of hollow-core floors
3. Protection from fire for residential homes
4. Fire safety systems









Plumbing and drainage proposals

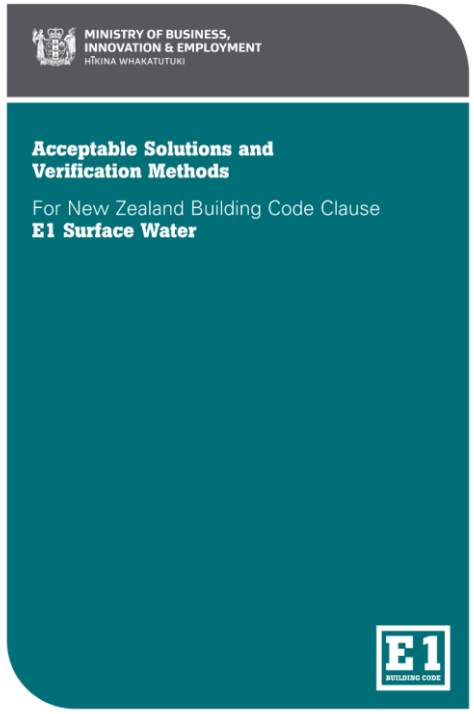
1. Lead in plumbing products
2. Water temperatures
3. Protection of potable water
4. AS/NZS 3500 Plumbing and drainage standards series
5. Water system supply components
6. Plumbing and drainage system material standards
7. Resolving conflicts and editorial changes

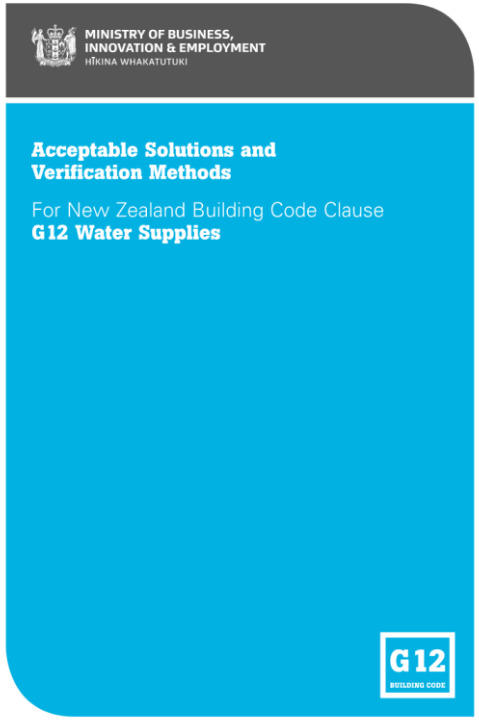
Building code update publication - November 2023

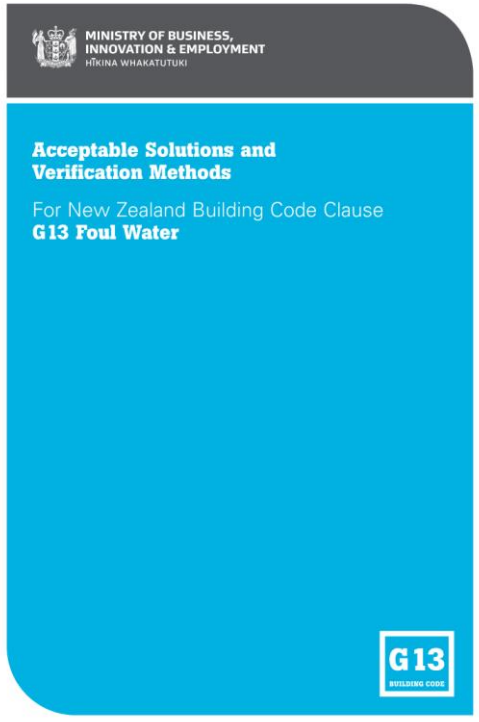
SURFACE WATER Disposal of rainwater from external surfaces and confirmation surface water cannot enter the building.

WATER SUPPLIES Requires the safe supply, storage, reticulation and delivery of hot and cold water.

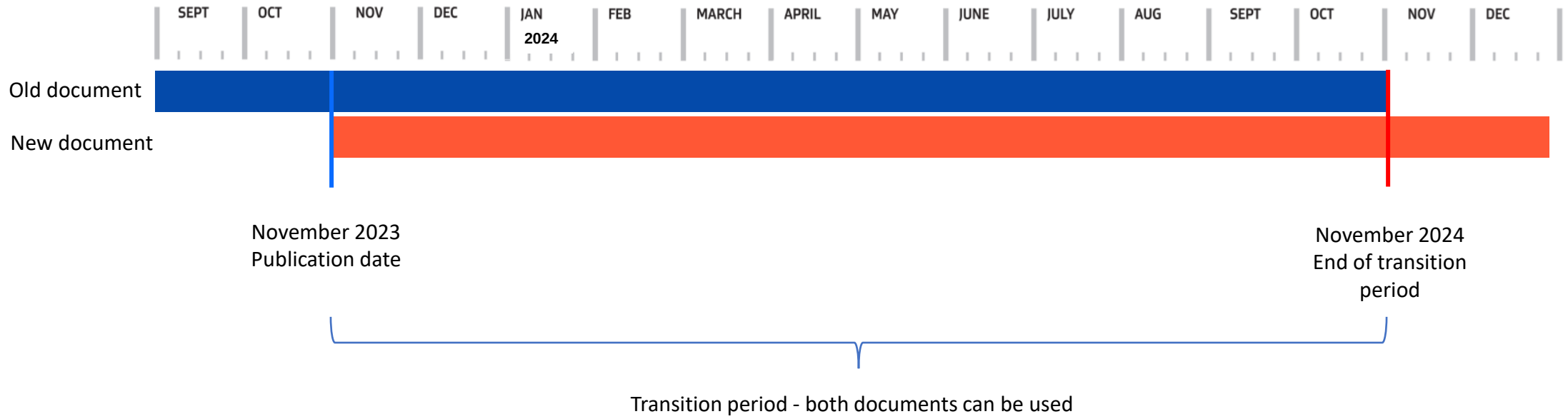
FOUL WATER Requires the safe disposal of foul water to prevent illness and the loss of amenity due to odour and accumulated matter.







Transition period – key dates



Lead in plumbing products – what is the change?

- Copper alloy plumbing products that are intended for use in contact with potable water for human consumption must have a weighted average lead content of no more than 0.25%.

- Includes products such as copper alloy fittings, valves, taps, mixers, water heaters, water dispensers (boiling and chilling units) and water meters intended for contact with potable water for human consumption.

Identifying compliance

- Building product information requirements
- Australia - Lead free WaterMark
- United States
- Canadian plumbing certification marks

Lead Free

LEAD FREE UPC ®

LEAD FREE IAPMO R&T ®

Canadian Standards Association

LOW LEAD CONTENT

Protection of potable water from backflow updates

Key areas:

1. Providing additional cross-connection hazard rating examples
2. Introducing containment backflow protection provisions
3. Updating backflow prevention device installation requirements
4. Amending provisions for hose taps and hose connection vacuum breakers
5. Referencing AS/NZS 3500.1 backflow prevention provisions in the new G12/AS3
6. Other supporting protection of potable water changes.

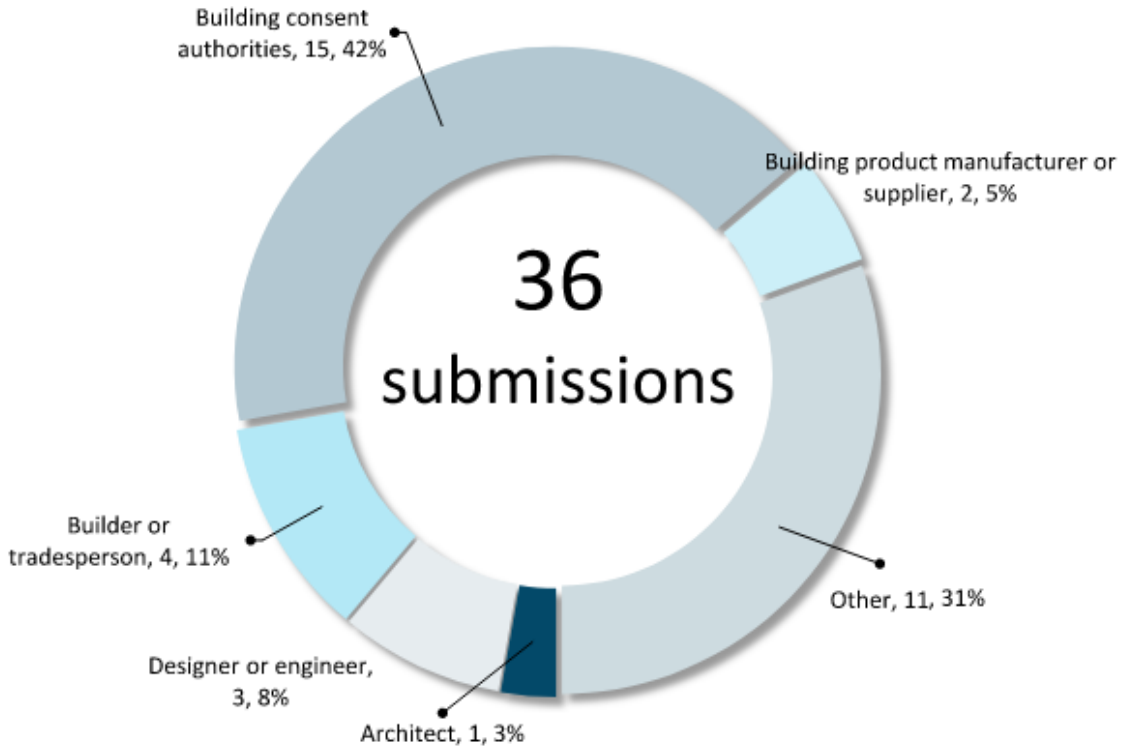
Acceptable Solution G12/AS1

3.0	**Protection of Potable Water**
3.1	Drawn water not to be returned
3.2	Cross connections prohibited
3.3	Cross connection hazard
3.4	Backflow protection
3.5	Air gap
3.6	Backflow prevention devices
3.7	Testing

Protection of potable water – industry feedback

- 36 submissions on the protection of potable water proposals.
- 82% of submissions supported the change and four more submissions did not indicate a preference.
- Only two submissions did not support the proposal.

FIGURE 3.1: Number of submissions received on the proposal for protection of potable water



Additional cross-connection hazard rating examples

High Hazard

- Bidets and douche seats
- Handheld bidet hoses and WC trigger sprays
- Connections for portable and mobile tankers
- Healthcare waste disposal equipment
- Hose taps associated with ‘soil waste dump points’

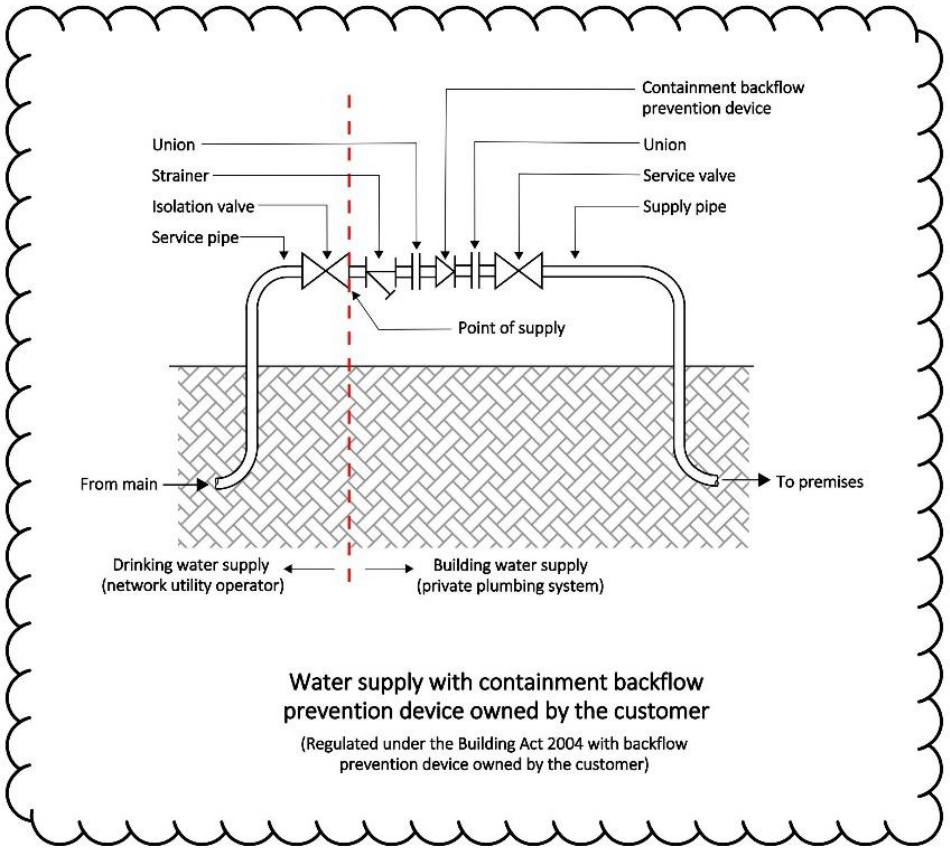
Medium Hazard

- Treated grey water
- Air handling unit humidifiers without chemicals
- Swimming pools, spas and fountains to exclude those filled by a hose tap in conjunction with household units.
- Note for carbonated drink dispensers

Low Hazard

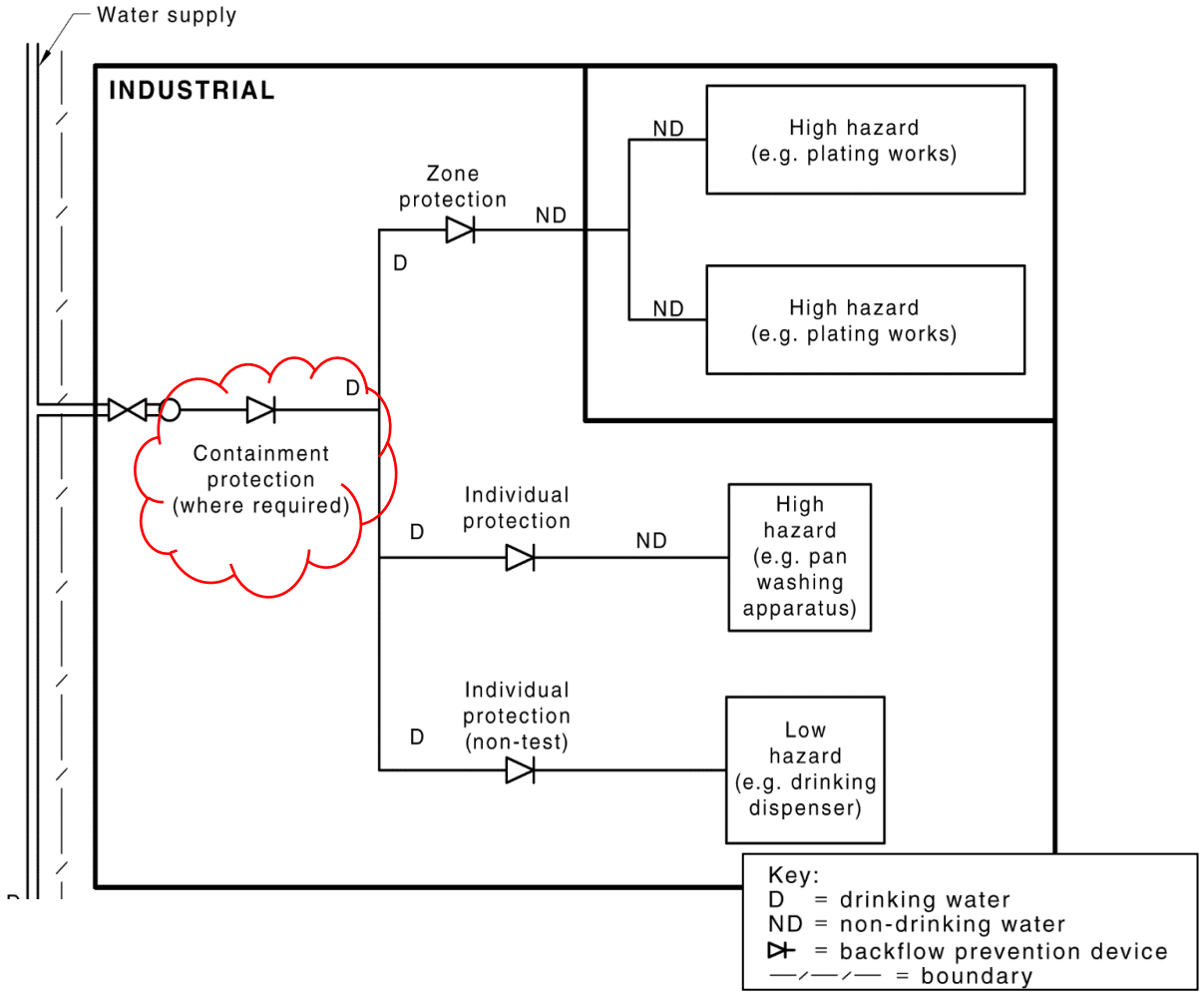
- Drinking fountains and bottle fillers
- Hose taps, other than those associated with medium or high hazard situations

Containment backflow protection provisions



Water supply with containment backflow prevention device owned by the customer

(Regulated under the Building Act 2004 with backflow prevention device owned by the customer)



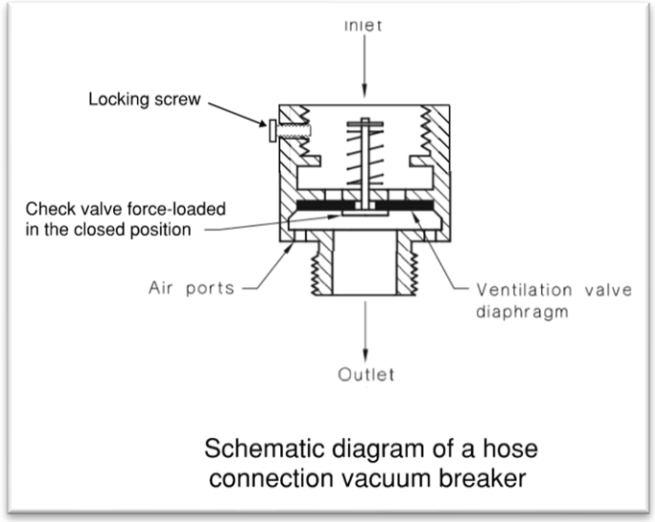
Backflow prevention device installation requirements

Provisions for the installation of backflow prevention devices will clarify that devices must be:

- attached only after the pipework has been flushed,
- fitted with connections which allow for the easy removal and replacement of the device,
- adequately supported,
- installed with isolation valves in order allow independently qualified persons to test these devices annually, and
- installed with adequate drainage provisions where installed within a building (RPZDs).

Commentary will also be provided around what constitutes an *accessible position* for backflow prevention devices to be installed.

Hose taps and hose connection vacuum breakers



Schematic diagram of a hose connection vacuum breaker

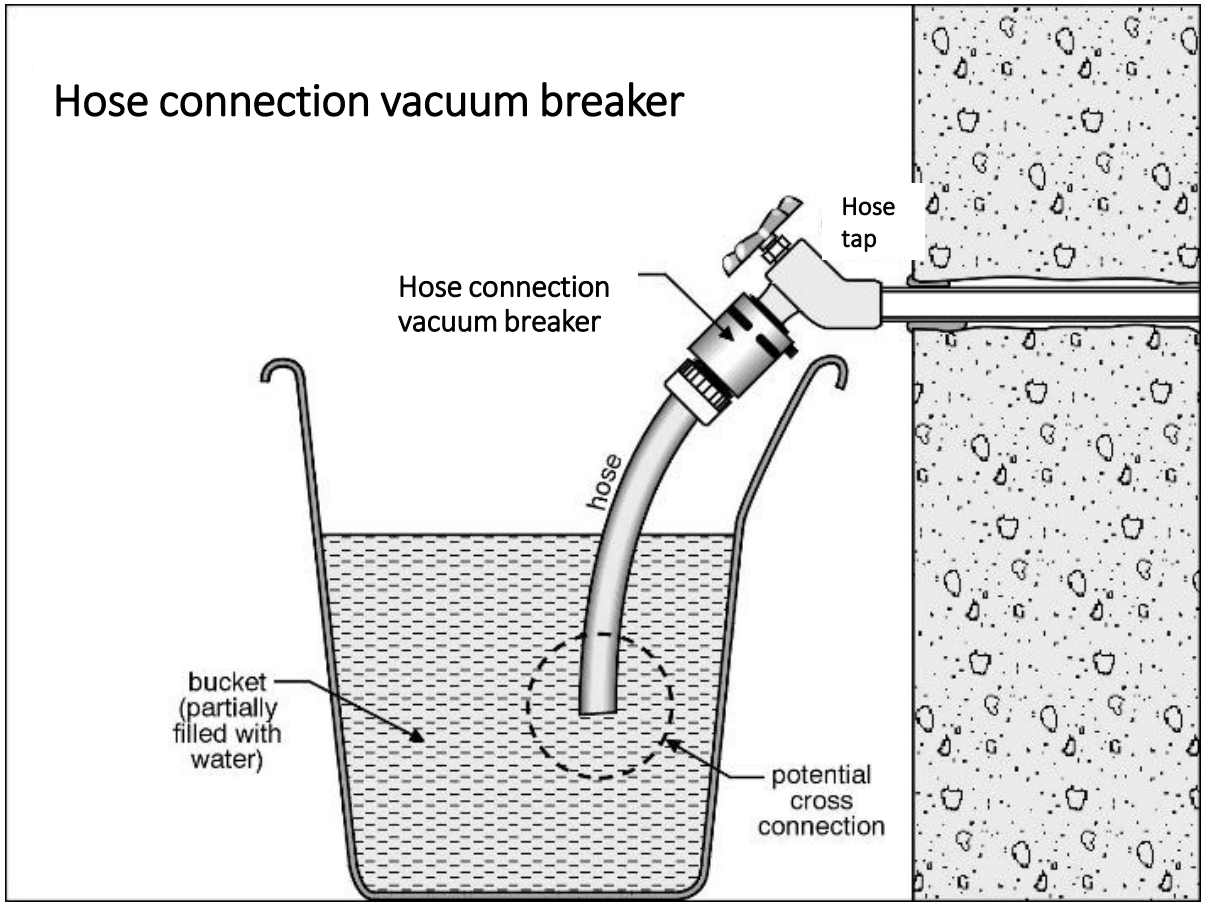
New Zealand Backflow Testing Standard - 2019

Appendix N VERIFICATION OF HOSE CONNECTION VACUUM BREAKER

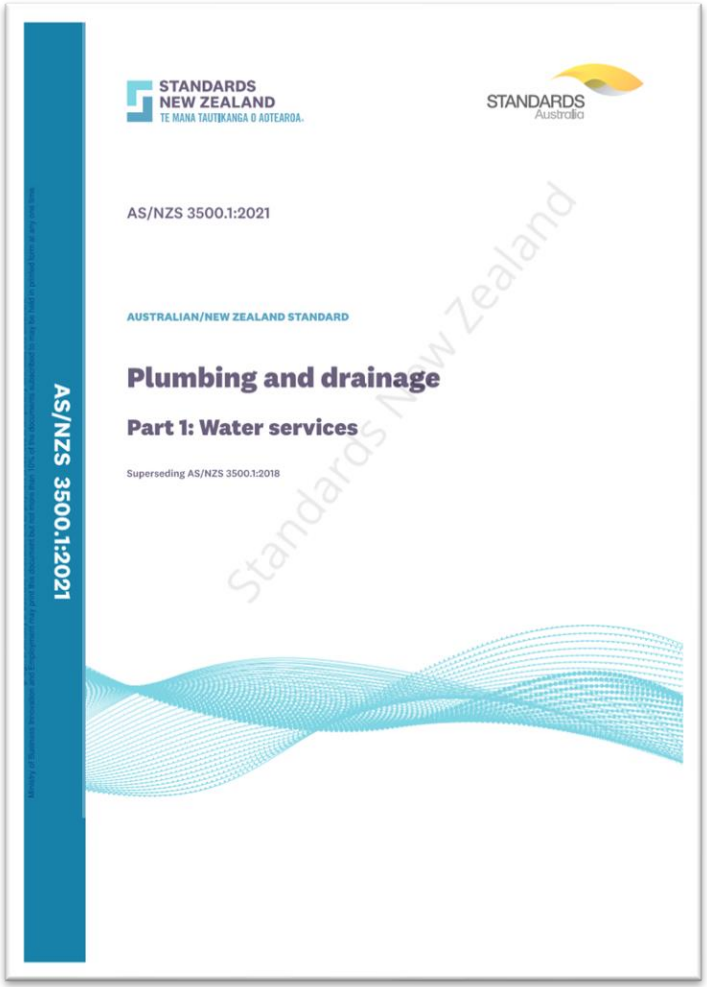
(Normative)

N1 Scope

This Appendix sets out the method for verifying the operation of hose connection vacuum-breaker backflow prevention devices.



Citing AS/NZS 3500.1 backflow prevention provisions

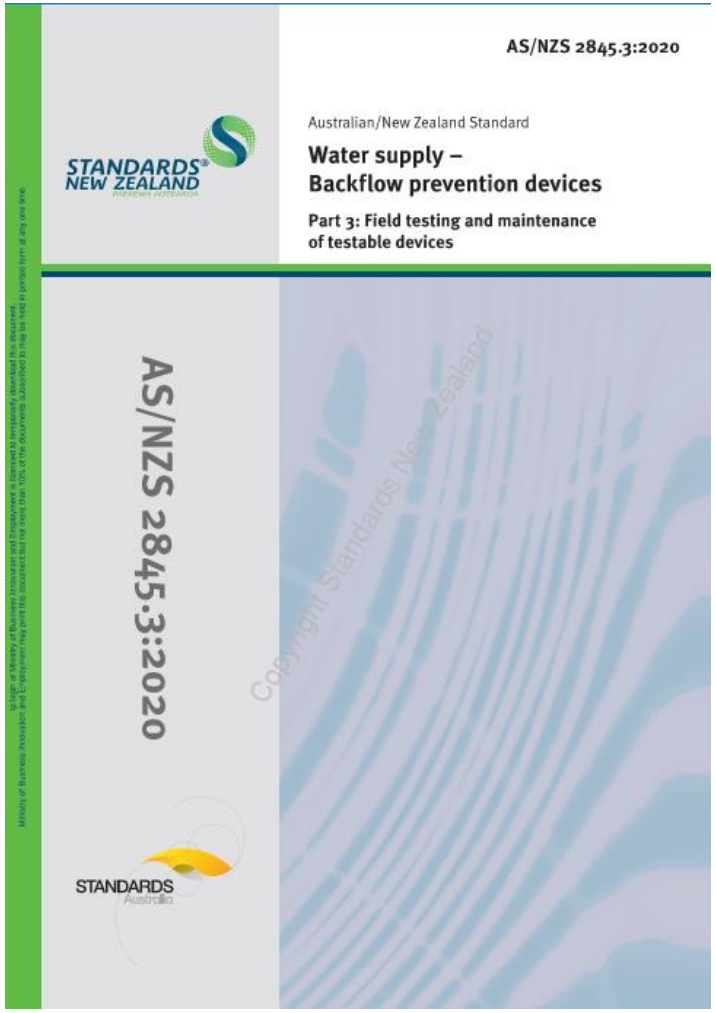


Section 4 Cross-connection control and backflow prevention

4.1 Scope of section

This section specifies requirements and methods for the prevention of contamination of the drinking water within the water service and the water main and provides for the selection and installation of backflow prevention devices.

Other supporting protection of potable water changes



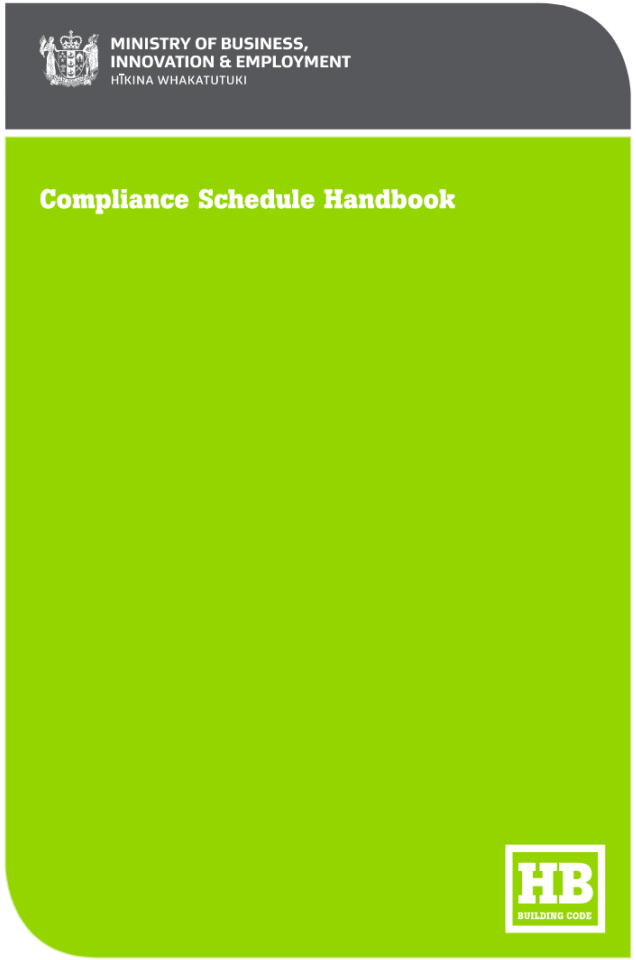
Plumbing and drainage material standards

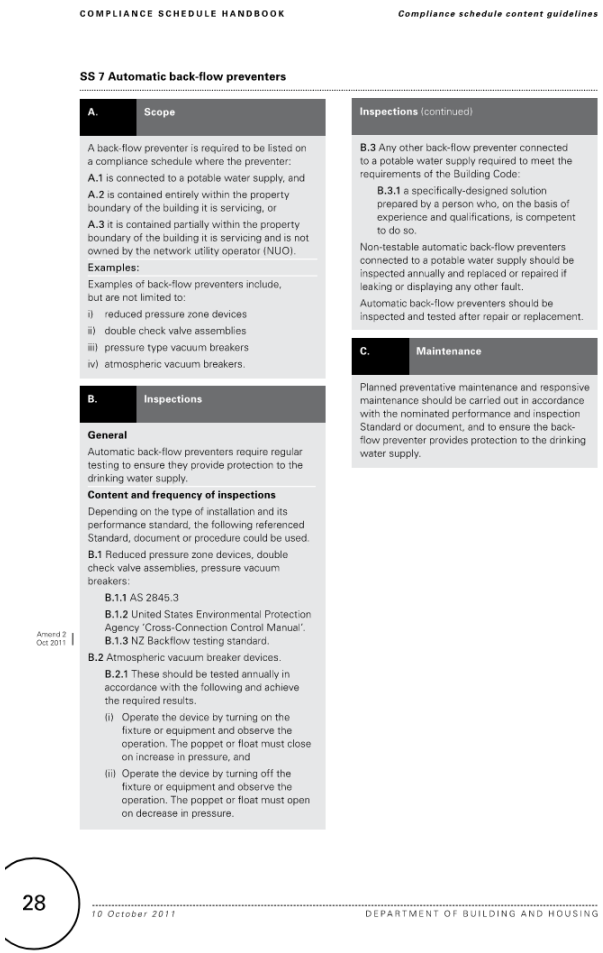
- Cross-linked polyethylene (PE-X) pipe and fittings
- Copper pipe and fittings
- Polybutylene pipe and fittings
- Polypropylene pipe and fittings
- Buried flexible pipes
- Polyethylene pipe and fittings
- PVC pipes and fittings
- Stainless steel pipe and fittings
- Vitrified clay pipes
- Ductile iron pipe and fittings
- Copper sheet
- Aluminium pipes
- Stainless steel
- Zinc aluminium sheet

40+ new or amended material standards being referenced

For the full list of changes refer to the plumbing and drainage - outcome of consultation document on MBIEs building performance website

Compliance Schedule Handbook Review





COMPLIANCE SCHEDULE HANDBOOK *Compliance schedule content guidelines*

SS 7 Automatic back-flow preventers

A. Scope

A back-flow preventer is required to be listed on a compliance schedule where the preventer:

A.1 is connected to a potable water supply, and

A.2 is contained entirely within the property boundary of the building it is servicing, or

A.3 it is contained partially within the property boundary of the building it is servicing and is not owned by the network utility operator (NUO).

Examples:

Examples of back-flow preventers include, but are not limited to:

i) reduced pressure zone devices
ii) double check valve assemblies
iii) pressure type vacuum breakers
iv) atmospheric vacuum breakers.

B. Inspections

General

Automatic back-flow preventers require regular testing to ensure they provide protection to the drinking water supply.

Content and frequency of inspections

Depending on the type of installation and its performance standard, the following referenced Standard, document or procedure could be used.

B.1 Reduced pressure zone devices, double check valve assemblies, pressure vacuum breakers:

B.1.1 AS 2845.3

B.1.2 United States Environmental Protection Agency "Cross-Connection Control Manual".

B.1.3 NZ Backflow testing standard.

Amend 2 Oct 2011

B.2 Atmospheric vacuum breaker devices.

B.2.1 These should be tested annually in accordance with the following and achieve the required results.

(i) Operate the device by turning on the fixture or equipment and observe the operation. The poppet or float must close on increase in pressure, and

(ii) Operate the device by turning off the fixture or equipment and observe the operation. The poppet or float must open on decrease in pressure.

Inspections (continued)

B.3 Any other back-flow preventer connected to a potable water supply required to meet the requirements of the Building Code:

B.3.1 a specifically-designed solution prepared by a person who, on the basis of experience and qualifications, is competent to do so.

Non-testable automatic back-flow preventers connected to a potable water supply should be inspected annually and replaced or repaired if leaking or displaying any other fault.

Automatic back-flow preventers should be inspected and tested after repair or replacement.

C. Maintenance

Planned preventative maintenance and responsive maintenance should be carried out in accordance with the nominated performance and inspection Standard or document, and to ensure the back-flow preventer provides protection to the drinking water supply.

Compliance Schedule Exemplar

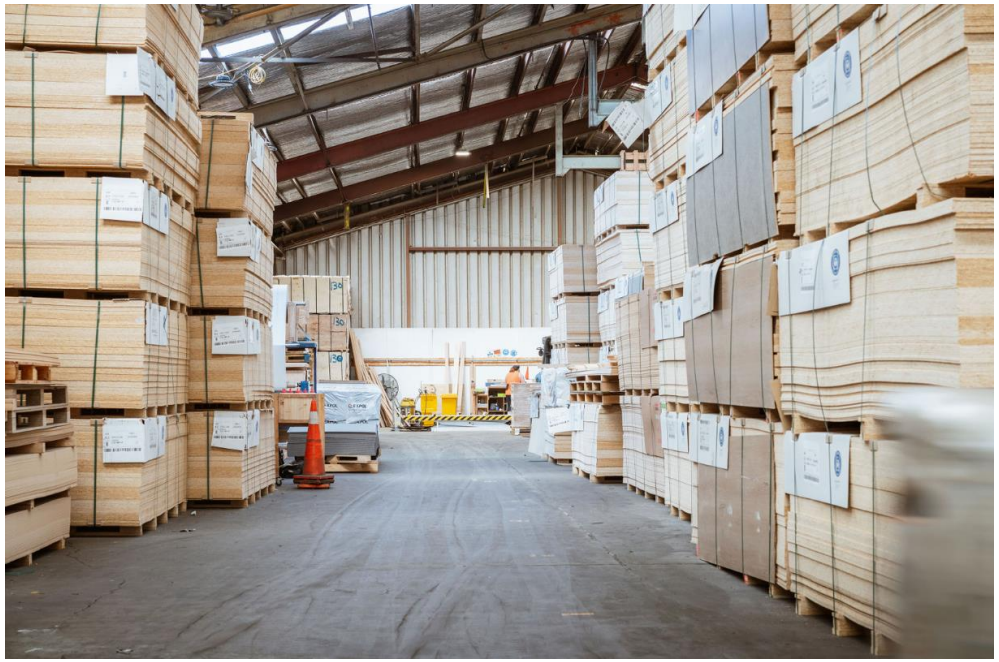
SS 7 Automatic back-flow preventers connected to a potable water supply			
Description (incl type)	Atmospheric vacuum breaker to external hose/stand-pipe tap (3 off)		
Specified system photo/s	 Hose/stand - pipe taps		
Make (if known)	[*manufacturer name*]	**Installation date**	2020
Models (if known)	[*model name*]		
Location	Hose/stand-pipe taps: 1 on grd level (adjacent to fire indicator panel on NE wall facing the car parking area) & 2 on L2 (NW wall of north pavilion & SW wall of south pavilion)		
Performance standard	AS/NZS 2845.1:2010 Water supply – Backflow prevention devices, refer to Part 1: Materials, design, & performance requirements (Amendment 1, dated June 2014)		
Inspection procedures	AS/NZS 2845.3:2020 (original version), refer to Part 3: Field testing & maintenance		
Inspection frequencies	Annually		
Inspection personnel	IQP		
Maintenance procedures	AS/NZS 2845.3:2020 (original version), refer to Part 3: Field testing & maintenance		
System interfacing	Not applicable		
Reporting procedures	The building owner must obtain annual written reports from any IQP or other person who carried out one or more inspections &/or maintenance procedures. Reports must, as a minimum: i. record any inspection, test, repair or maintenance carried out ii. record any faults found or maintenance required & the remedy applied iii. include the date the work was carried out iv. include the name of the person who performed the work All reports must be kept at 112 Bridge St, Bulls & kept for a minimum of 2 years		
Signage	Nil		

Comments/notes	Network utility operator (NUO) owns the reduced pressure zone device ([*Manufacturer name*], [*model name*], serial # A076524) located within a caged enclosure on the property & adjacent to the Criterion St frontage & car park. The NUO is responsible for the maintenance & annual inspection of this backflow preventer & it is not subject to this compliance schedule

New building product information requirements

The new regulations commence on 11 December 2023

Manufacturers and importers.



Wholesalers, retailers, and distributors.

[Link - Building product information requirements]

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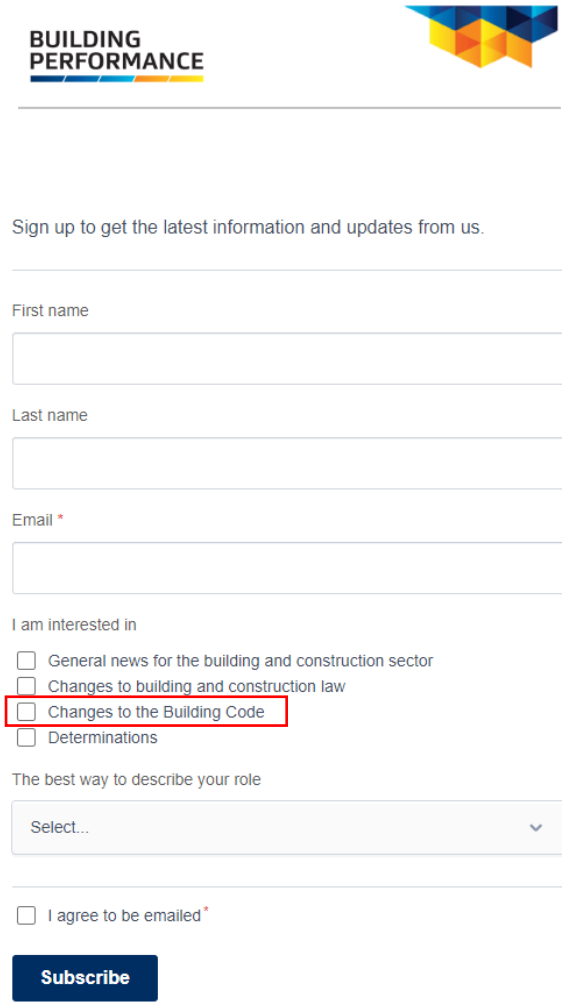

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Thank you.

Questions?

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