BUILDING PERFORMANCE

Consultation submission form

Building Code update 2022

Plumbing and drainage
Structural stability of hollow-core floors
Protection from fire

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

New Zealand Government

Contents

How to submit this form

This form is used to provide feedback on proposals found within the Building Code consultation documents:
› Plumbing and drainage
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› Protection from fire

When completing this submission form, please provide comments and reasons explaining your choices. Your feedback provides valuable information and informs decisions about the proposals.

You can submit this form by 5pm, Friday 1 July 2022 by:
› email: buildingfeedback@mbie.govt.nz, with subject line Building Code consultation 2022
› post to: Ministry of Business, Innovation and Employment, 15 Stout Street, Wellington 6011
or: Ministry of Business, Innovation and Employment, PO Box 1473, Wellington 6140

Your feedback will contribute to further development of the Building Code. It will also become official information, which means it may be requested under the Official Information Act 1982 (OIA).

The OIA specifies that information is to be made available upon request unless there are sufficient grounds for withholding it. If we receive a request, we cannot guarantee that feedback you provide us will not be made public. Any decision to withhold information requested under the OIA is reviewable by the Ombudsman.

Submitter information

MBIE would appreciate if you would provide some information about yourself. If you choose to provide information in the "About you" section below it will be used to help MBIE understand the impact of our proposals on different occupational groups. Any information you provide will be stored securely.

A. About you

Name:	Nick Hill
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B. Are you happy for MBIE to contact you if we have questions about your submission?

☒ Yes ☐ No

C. Are you making this submission on behalf of a business or organisation?

☒ Yes ☐ No

If yes, please tell us the title of your company/organisation.

Building Officials Institute of New Zealand (BOINZ)

D. The best way to describe your role is:

☐ Architect
☐ Engineer (please specify below)
☐ BCA/Building Consent Officer
☐ Residential building owner
☐ Builder or tradesperson (please specify below)
☐ Commercial building owner
☐ Building product manufacturer or supplier (please specify the type of product below)
☒ Other (please specify below)
☐ Designer (please specify below)
☐ Prefer not to say

Please specify here.

The Building Officials Institute of New Zealand is the peak body for building surveying in New Zealand and includes membership across building control, prepurchase property inspection and specialist building evaluation services. Our members work across local government and the private sector

Submitter information

E. Privacy information

☐ The Privacy Act 2020 applies to submissions. Please tick the box if you do **not** wish your name or other personal information to be included in any information about submissions that MBIE may publish.

☒ MBIE may upload submissions or a summary of submissions received to MBIE's website at www.mbie.govt.nz. If you do **not** want your submission or a summary of your submission to be placed on our website, please tick the box and type an explanation below:

F. Confidential information

☒ I would like my submission (or identifiable parts of my submission) to be kept confidential and **have stated** my reasons and ground under section 9 of the Official Information Act that I believe apply, for consideration by MBIE.

If you have ticked this box, please tell us what parts of your submission are to be kept confidential.

Plumbing and drainage
Proposal 1. Lead in plumbing products

We are proposing to limit the allowable lead content in plumbing products which contain copper alloys and are intended for use in contact with drinking water to not more than 0.25%. These new requirements are proposed for inclusion in the acceptable solutions for Building Code clause G12 Water supplies. The transition period is proposed to end on 1 September 2025 to provide plumbing product manufacturers and suppliers time to make the necessary changes.

Questions for the consultation

1-1. Do you support amending Acceptable Solution G12/AS1 as proposed to limit the allowable lead content in plumbing products?

☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

The simplest and most effective way to ensure the new reduced concentration of lead specified in the manufacturing standards and conformance thereof should be part of the manufacturers compliance declaration of complying with the manufacturing Standard.

BOINZ recommends that MBIE, through its relationships with Standards New Zealand and Standards Australia, promotes and instigates changes to the plumbing manufacturing Standards for products containing lead to have a maximum lead level of less than 0.25%.

1-2. What impacts would you expect on you or your business from the proposed change?

These impacts may be economic/financial, environmental, health and wellbeing, or other areas.

From a retailer and installer perspective BOINZ expects MBIE and supporting supplier and trade association to deliver education and guidance in respect of appropriate of product choice to achieve the reduced lead content.

Additionally, this applies for compliance checking before the issuing of a code compliance certificate (CCC) for plumbing products to show they contain lead at or below 0.25% level, when measured and tested to NSF/ANSI/CAN 372: 2020 would be a BCA requirement.

Product technical statements (PTS) will need to specify the lead compliance level across a wide range of products from multiple manufacturers from around the world. This data will need to be collected and analysed to demonstrate compliance for each building prior issuing the CCC. Importantly, it would be reasonable to expect suppliers and installers have readily available supporting PTS documentation allowing effective and efficient consenting analysis.

We see the initial phasing-in of data availability and subsequent building consent analysis as being onerous to implement. Similarly, manufacturers and suppliers of products new to the market will need to be aware of the supporting information requirements and have an expectation that there will be a pathway of familiarisation, when compared to existing popular/main-stream products.

Plumbing and drainage
Proposal 1. Lead in plumbing products

1-3. What support would you or your business would need to implement the proposed change if introduced?

It would be useful for the regulator to undertake a general awareness campaign on the requirement for plumbing products to meet requirement for allowable lead level content. In turn, this could be supported by the manufacturer and supplier industry to provided promotional material at point-of-sale, making it easy to identify compliant product. Reputable suppliers will likely rationalise their stock-holding and will quickly adopt a lead-free approach to product stocking to deliver a seamless purchase environment.

BCAs will need a simple and fast way of checking compliance with this new requirement.

It would be useful for MBIE to advise industry that there will be a robust prosecution regime in respect of the supply and installation of non-compliant product.

1-4. Do you agree with the proposed transition time of 34 months for these proposed new requirements to take effect on 1 September 2025?

- ☒ Yes, it is about right
- ☐ No, it should be longer (4 years or more)
- ☐ No, it should be shorter (less than 34 months)
- ☐ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

It is about right. However, compliance testing and product manufacture logistics may cause delays in respect of this timeframe. We would also consider that should the timeframe adoption become unrealistic, that MBIE advise the market of any extension.

Plumbing and drainage
Proposal 2. Water temperatures

We are proposing to reduce the maximum temperature of hot water at the tap to reduce the risk of scalding injuries to New Zealanders. The maximum allowable temperature for most buildings is proposed to be reduced from 55°C to 50°C. For early childhood centres, the maximum allowable temperature is proposed to be reduced from 45°C to 40°C to align with Ministry of Education requirements. The proposed changes would only apply to new plumbing fixtures used for personal hygiene, such as hand basins, baths and showers.

These changes are proposed to be introduced into Building Code Acceptable Solution G12/AS1, along with additional temperature control devices and pressure requirements which will improve alignment with the AS/NZS 3500 plumbing and drainage standards.

Questions for the consultation

2-1. Do you support amending Acceptable Solution G12/AS1 to help reduce the number of hot water scalding injuries in New Zealand by reducing maximum hot water delivery temperatures for some buildings?

The proposed hot water delivery temperatures are:

› 50°C for most buildings
› 45°C for institutions such as schools, hospitals and care homes
› 40°C for early childhood centres to align with Ministry of Education requirements.

☐ Yes, these temperatures are about right
☐ No, these temperatures should be even lower
☐ No, the temperatures should remain as is
(status quo at 55°C for most buildings and 45°C for institutions and early childhood education centres)
☐ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

BOINZ believes the proposal is confusing. It confuses safe water temperatures to prevent scalding with comfort water temperature for use in early childhood centres.

BOINZ agrees with reducing 55^{o}C to 50^{o}C.

BOINZ recommends that only two temperatures are required, 50^{o}C and 45^{o}C, for avoiding the likelihood of scalding requirement in G12/AS1.

BOINZ agrees with keeping 45^{o}C for schools, old people's homes, institutions for people with psychiatric or physical disabilities and hospitals. We strongly recommend reinstating early childhood centres in the 45^{o}C paragraph.

BOINZ disagrees with 40^{o}C for early childhood centres. The early childhood centre 40^{o}C is a "comfort" temperature for licensing the centres by the Ministry of Education and not a safety requirement. If the ECE temperature is to be included in G12/AS1 it should not be in a section under safety.

BOINZ recommends a COMMENT is added stating: "For licensing purposes for Early Childhood Centres the Ministry of Education requires a comfort temperature of 40^{o}C at personal hygiene sanitary fixtures used by children."

Plumbing and drainage
Proposal 2. Water temperatures

BOINZ brings to your attention that the 45 °C temperature is for children in early childhood centre, students in schools, residents in old people's homes, and patients in institutions and hospitals.

BOINZ reinforces the above paragraph that for staff facilities in the building uses above, 50 °C is a safe hot water temperature.

BOINZ agrees with the use of the term "care homes" instead of "old people's homes". People living in apartments (Housing) in retirement village complexes can have a 50 °C temperature.

Plumbing and drainage
Proposal 2. Water temperatures

2-2. What impacts would you expect on you or your business from the proposed changes?
These impacts may be economic/financial, environmental, health and wellbeing, or other areas.

BCAs and plumbing design and installation personnel will need to learn the new requirements and the range of devices that will deliver the new 50 °C temperature.

BOINZ Training Academy will engage with, and educate the Institutes membership and other sectors as required to ensure understanding these changes. We may request support from MBIE to assist in this knowledge uptake.

2-3. Do you agree with the proposed transition time of 12 months for the proposed changes to take effect?

- ☒ Yes, it is about right
- ☐ No, it should be longer (24 months or more)
- ☐ No, it should be shorter (less than 12 months)
- ☐ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

12 Months is about right.

Plumbing and drainage
Proposal 3. Protection of potable water

We are proposing to update Acceptable Solution G12/AS1 to improve the requirements to protect potable water from backflow contamination. Backflow occurs when the flow of water within a pipe is reversed, which can draw contaminants into a potable water supply. It can create a health risk to occupants in buildings and to entire public water supply networks. The proposed changes will improve clarity around when backflow prevention is required, what type of backflow prevention devices are suitable and how these devices should be installed and tested.

Questions for the consultation

3-1. Do you support the proposed amendments to Acceptable Solution G12/AS1 for the protection of potable water?

☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

BOINZ supports any improvements in the protection of potable water from contamination. However, BOINZ has a level of concern due to unnecessary complexity.

BOINZ is concerned that the management of boundary (containment) backflow protection as part of the building will be an issue that needs a greater level of clarity, especially with the implementation of the Three Waters Reforms.

The requirements in the Health Act contains boundary protection either by the building owner, under a building consent and a BWOF, or by the Network Utility Operator (NUO). We are aware these provisions have been transferred into the Water Services Act.

BOINZ recommends that containment protection is in its own discrete section because its application has a different philosophy to paragraphs 3.4.1 to 3.4.5. Containment protection is based on the nature of the premises and water downstream is considered potable. Individual protection is designed to the hazard and whether back-siphonage or backpressure or both applies and the water downstream in not potable.

BOINZ recommends that information relating to containment protection be provided by the Network Utility Operator (NUO) in the Project Information Memorandum (PIM).

BOINZ agrees and support the additions of bidets and douche seats, and handheld bidet hoses and WC trigger sprays into the examples of high hazard.

BOINZ agrees with the additions and changes to the examples for medium hazard. BOINZ encourages investigation the risks associated with water blasting equipment and whether it should be added as a medium hazard.

BOINZ disagrees with the examples cites for low hazard.
1) Recommend an air gap in the comment, as a note, as a low hazard solution for a rainwater tank is in our opinion misleading because it is a high hazard device for back-siphonage, and rainwater tanks are not low hazard due to avian faecal contamination.

2) External hose tap should be high hazard examples as the hoses attached can easily be used for hazardous chemical, insecticide mixing and chemical for washing cars, houses and boats etc. Supporting this we compare this with bidet spray hoses which are being proposed and should be high hazard.

G12/AS1 Table 2
We note a conflict between the Notes and the body of Table 2. Atmospheric vacuum breakers (AVBs) and

hose tap vacuum breakers (HVBs) are for all hazards in back siphonage situations in the body of the Table but referred to as low hazard in the notes.

BOINZ recommends that AVBs and HVB remain high hazard for back siphonage situations.

G12/AS1 Paragraph 3.4.3(c)

Paragraph 3.4.3(c) include backflow prevention device to be installed in appliances and apparatus. Technically these are not part of the building and are outside the Building Act and the Compliance Schedule BWOF regime does not apply. What legislation will these backflow preventers be tested under?

G12/AS1 Paragraph 3.4.7

BOINZ supports that all backflow preventers should be verified in the location they are installed, and that this requirement should be for all hazards, and not only high and medium hazard devices. We also support where a device, such as a dual check valve is used, it is replaced at regular intervals and is monitored through the compliance schedule and BWOF regime.

G12/AS1 Table 2A

If the selection of backflow preventer for medium hazard references double check valve assembly manufactured to AS/NZS 2845.1, Section 10 (as per the current edition), these devices have test points; and therefore, testable is not a requirement for device selection.

Also, in New Zealand backflow preventers are required to be tested, maintained, inspected and reported on in accordance with the Compliance Schedule. Therefore "Testable device" is not required. BOINZ is concerned that NZ does not inadvertently use Australian requirements, which are not needed given that backflow preventers must be on a Compliance Schedule. New Zealand does not need the Australian system, where they do not have Compliance Schedule/BWOFs, and hope that by using the words testable, the devices will be tested.

BOINZ recommends that "testable device" not be used in this Table, or G12/AS1.

BOINZ disagrees with rainwater tanks being classified as low hazard, principally due to the hazard of bird excrement on roofs. Please note that the largest number of rainwater tanks will be used for residential purposes. Should there also be NUO water supply to the rainwater tank, the NUO water supply will be protected by an air gap, a high hazard device.

G12/AS 3.6.3

BOINZ is concerned the proposals complicate what is needed. We suggest that the four backflow prevention devices be reinstated, together with the updated manufacturing Standard referenced to ensure this Acceptable Solution only covers four devices, which can be testable or verified as working.

Without this level of specification, the Acceptable Solution will be needlessly complicated and capture a range of non-testable devices, causing issues for the compliance schedule.

G12/AS1 3.6.3 (b)

The objective of this paragraph is for the devices to be removable.

BOINZ recommends the wording reflect the practical realities of the product used, and the jointing configurations. Unions are usually on devices 50mm and below and flanges on 50 mm and above. We therefore suggest the wording be changed to "fitted for easy removal of the device (e.g., flanges or union on the inlet and outlet sides of the device).

BOINZ recommends that hose-tap vacuum breakers (HVB) are added to G12/AS1 Table 2

G12/AS1 4.3.1

Plumbing and drainage
Proposal 3. Protection of potable water

Australia has reticulated non-potable (non-drinking) water and hence uses Lilac coloured pipe for the reticulation of this NUO supplied water.

Is it MBIE's intention to have lilac pipe from the rainwater tank to the WC? Does this paragraph only apply to non-potable water reticulation in industrial buildings and not in houses?

BOINZ suggest that this paragraph receives further consideration.

BOINZ suggest that G12/AS1 be amended to include information on how non-potable water, such as supplied from a rainwater tank can be treated to make it potable, such as filtration and UV sterilisation.

3-2. What impacts would you expect on you or your business from the proposed changes?
These impacts may be economic/financial, environmental, health and wellbeing, or other areas.

BOINZ is of the opinion that the proposals are complicating backflow design and installation, and will cause confusion. BOINZ suggestions are provided to have a simple, relevant and applicable New Zealand backflow section.

Adopting our suggestions will minimise financial, environmental and health exposures and risks.

3-3. Do you agree with the proposed transition time of 12 months for the proposed changes to take effect?

- ☒ Yes, it is about right
- ☐ No, it should be longer (24 months or more)
- ☐ No, it should be shorter (less than 12 months)
- ☐ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

BOINZ agree with the 12 month transition time with our suggested amendment included in the changes.

Plumbing and drainage
Proposal 4. AS/NZS 3500 Plumbing and drainage standards

We are proposing to cite the 2021 editions of the AS/NZS 3500 Plumbing and drainage standards as acceptable solutions for complying with Building Code clauses E1 Surface Water, G12 Water Supplies and G13 Foul Water. This follows a three-year revision project to improve these standards. These standards play an integral part in setting out design and installation requirements for plumbing and drainage systems in New Zealand. We are also proposing to cite AS/NZS 3500: 2021 Part 1 and Part 4 under a new Acceptable Solution G12/AS3, which will provide consistency between the status of these standards under the Building Code.

Questions for the consultation

4-1. Do you support amending the Acceptable Solutions for E1, G12, and G13 to cite the following AS/NZS 3500: 2021 Plumbing and drainage standards as proposed?

› AS/NZS 3500.1: 2021 – Water Services
› AS/NZS 3500.2: 2021 – Sanitary plumbing and drainage
› AS/NZS 3500.3: 2021 – Stormwater drainage
› AS/NZS 3500.4: 2021 – Heated Water Systems

AS/NZS 3500.1: 2021 – Water Services	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
AS/NZS 3500.2: 2021 – Sanitary plumbing and drainage	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
AS/NZS 3500.3: 2021 – Stormwater drainage	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
AS/NZS 3500.4: 2021 – Heated Water Systems	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

BOINZ supports the referencing of AS/NZS 3500 series of Standards and makes the following comments.

Throughout this submission BOINZ has commented on the way that these Standards have been referenced and recommend that the referencing be correctly and consistently applied.

Standards are referenced in sections, paragraphs, or other Acceptable Solutions. Cited is another term used by MBIE and the industry. We make the point that 'referenced' is the better word because Standards are included in the Reference Section of these documents.

Plumbing and drainage
Proposal 4. AS/NZS 3500 Plumbing and drainage standards

Standards do not contain "requirements" or "provisions" as these are in the Building Code performance criteria, so the words are consistent with the Building Code framework and should not be used when referencing these Standards.

BOINZ recommends when referencing Standards, the word "referenced" is used for clarity and consistency.

4-2. Do you support issuing the new G12/AS3 as proposed to cite AS/NZS 3500.1: 2021 – Water services and AS/NZS 3500.4: 2021 – Heated water services?

☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

BOINZ agrees that these Standards be referenced in G12/AS3.

4-3. Are there any additional modifications to the referencing of the AS/NZS 3500: 2021 Plumbing and drainage standards that we should consider?

☐ Yes ☐ No ☐ Not sure/no preference

If there are modifications that you think should be included, please tell us below.

BOINZ is concerned that using AS/NZS 3500 Standards is carefully considered before referencing to ensure that unintended practices, which are suitable for Australia, but not necessary for New Zealand, do not creep into New Zealand practice. This particularly applies to the protection of potable water section in AS/NZS 3500.1.

BOINZ recommends, as mentioned in the BOINZ submission to Proposal 3 P*rotection of Potable Water,* that the G12/AS1 section on the same topic should be a clear, simple, and dedicated New Zealand only solution.

This recommendation will remove the complexities of testable vs non-testable devices and deliver consistent compliance outcomes to benefit the supplier, designer, installer, and BCAs.

Plumbing and drainage
Proposal 4. AS/NZS 3500 Plumbing and drainage standards

4-4. What impacts would you expect on you or your business from the proposed changes?
These impacts may be economic/financial, environmental, health and wellbeing, or other areas.

Referencing the Standards brings consistency as they are currently well used by the plumbing sector and understood by BCAs.

BOINZ envisages the clear and consistent referencing of the Standards as proposed, subject to BOINZ previous comments, will, through industry application deliver cost effective plumbing installations for the consumer and subsequently deliver appropriate environmental and health outcomes.

4-5. Do you agree with the proposed transition time of 12 months for the proposed changes to take effect?

- ☒ Yes, it is about right
- ☐ No, it should be longer (24 months or more)
- ☐ No, it should be shorter (less than 12 months)
- ☐ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

BOINZ does not foresee any complication with the 12 month transition time.

Plumbing and drainage
Proposal 5. Water supply system components

We are proposing 12 improvements to Acceptable Solution G12/AS1 to fill in gaps in this compliance pathway, address issues raised by building consent authorities and industry bodies, and provide more ways for building water supply systems to comply with the Building Code.

We are also proposing to introduce a 'deemed to comply' pathway for use by plumbing system designers to calculate the design flow rates for sizing water supply pipework in multiple types of buildings within Verification Method G12/VM1.

Questions for the consultation

5-1. Do you support the amendments to Acceptable Solution G12/AS2 for the following topics?

Expansion vessels	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
Seismic restraint of water heaters	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
Accessible taps	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
Wet-back water heaters	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
UV resistant pipework insulation material	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
Cleaning and disinfection of water storage tanks	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
Water supply pipework installation standards	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
Minimum and maximum water pressures	☐ Yes, I support it ☒ No, I don't support it ☐ Not sure/no preference
Relief valve drain discharge locations and tundish drain sizing	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
Minimum pipework cover below ground	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
Flushing of water supply systems	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
Unintentional heating of cold water	☐ Yes, I support it ☐ No, I don't support it ☒ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

BOINZ suggest the following points receive further consideration:

G12/AS1 5.2.2 Comment

The proposed first sentence does not relate to tank overflow details as it is about installation of tanks, and hence **BOINZ suggests** that this be deleted. Also, we note AS/NZS 3500.1 does not include seismic restraint of water tanks, and support reference to G12/AS1 Figure 4.

Plumbing and drainage
Proposal 6. Plumbing and drainage system material standards

G12/AS1 Section 5.3 Water Pressures (new proposal)

BOINZ understands the intent of this section is for the correct operation of sanitary fixtures and sanitary appliance.

BOINZ note there is no G12 Water Supplies performance criteria for water conservation, and **BOINZ suggest** Paragraph 5.3.1 is removed as it relates to water conservation.

BOINZ agrees with paragraph 5.3.2 for the correct operation of sanitary fixtures, appliances and fittings.

BOINZ recommends that the COMMENT after paragraph 5.3.3 is amended to remove the word "referenced" is replaced it with the word "used" to avoid any possible confusion that manufacturer's instructions are being given "referenced" status.

G12/AS1 5.4.1 COMMENT

BOINZ recommends that the COMMENT after paragraph 5.4.1 is amended to remove the word "referenced" is replaced it with the word "used" to avoid any possible confusion that manufacturer's instructions are being given "referenced" status.

G12/AS1 Figure 5

BOINZ recommends that the two uses of the word "Tempering valve" in the diagrams are replaced with "mixing device – see Table 8" to be consistent with paragraph 6.1.4.2.

G12/AS1 6.3.3

BOINZ recommends this paragraph is amended below to add clarity

a) Relief from the expansion of hot water by either:

(i) An expansion control valve, *(low, medium and mains pressur*e systems), or
(ii) An expansion vessel, *(mains pressure systems only)*

G12/AS1 6.6.3

BOINZ is concerned that wording change to add "pressure" before relief valve excludes the use of temperature/pressure relief valves. The term relief valve covers both the temperature/pressure relief valve and pressure relief valve.

BOINZ suggest this is reworded for clarity.

G12/AS1 6.6.5 c)

BOINZ suggests that the word "alternatively" be removed from the middle of the paragraph and replace the second with
"A heat trap shall be provided between the expansion control valve and the storage water heater inlet when the expansion control valve is closer than 500 mm from the heater."

"Alternative" can imply alternative solution and should not be used within an Acceptable Solution.

G12/AS1 Table 7 note 3

BOINZ suggests that for clarity and accuracy the word "alternative provisions" are replaced with the words "another way"

G12/AS1 Figure 14

The notes and the labelling of the water heater strapping are conflicting and confusing.

BOINZ would like clarification on the following:

Note 1. What does additional mean in this note? Are 2 centre straps required on a 250 L heater when it is 12m above ground level?

Note 4. Suggest this Note changes "clearance" to "distance".

The extra strap part within Note 4 is confusing. BOINZ suggest that this is rewritten to remove the "1 or2 straps" ambiguous reference as this is detailed in the next sentence.?

Note 5. Detail of this Note should be in note 1.

BOINZ recommends that the Notes to Figure 14 are rewritten for clarity and to remove ambiguity.

BOINZ suggests that the rewritten Notes to Figure 14 are added as text to Section 6.11.4 Structural support, thereby increasing their status.

G12/AS1 6.14 Safe water temperatures

BOINZ believes the proposal is confusing. It confuses safe water temperatures to prevent scalding with comfort water temperature for use in early childhood centres.

BOINZ agrees with reducing 55°C to 50°C.

BOINZ recommends that only two temperatures are required, 50°C and 45°C, for avoiding the likelihood of scalding requirement in G12/AS1.

BOINZ agrees with keeping 45°C for schools, old people's homes, institutions for people with psychiatric or physical disabilities and hospitals. We strongly recommend reinstating early childhood centres in the 45°C paragraph.

BOINZ disagrees with 40°C for early childhood centres. The early childhood centre 40°C is a "comfort" temperature for licensing the centres by the Ministry of Education and not a safety requirement. If the ECE temperature is to be included in G12/AS1 it should not be in a section under safety.

BOINZ recommends a COMMENT is added stating: "For licensing purposes for Early Childhood Centres the Ministry of Education requires a comfort temperature of 40°C at personal hygiene sanitary fixtures used by children."

BOINZ brings to your attention that the 45°C temperature is for children in early childhood centre, students in schools, residents in old people's homes, and patients in institutions and hospitals.

BOINZ reinforces the above paragraph that for staff facilities in the building uses above, 50°C is a safe hot water temperature.

BOINZ agrees with the use of the term "care homes" instead of "old people's homes". People living in apartments (Housing) in retirement village complexes can have a 50°C temperature.

G12/AS1 6.14

BOINZ recommends additional paragraph inserted after 6.14.1 the types of devices.

Section 6.14 needs a paragraph after 6.14.1 stating that safe hot water temperatures can be achieved by:

a) temperature control devices installed in the pipework to all the sanitary fixtures and sanitary appliance used for personal hygiene, or
b) devices installed at each sanitary fixture or appliance used for personal hygiene.

G12/AS1 Table 8

BOINZ recommends that Table 8 be divided by headings into device for 50°C hot water delivery temperature and for 45°C hot water delivery temperature.

Also, BOINZ is concerned about the reference to AS3498 for Temperature Limiting Water Heaters because it is unsure of if these water heaters are storge type they will need to control Legionella bacteria. If additional Legionella control hardware/pipework is required, this information should be covered in a note to the Table.

G12/AS1 Figure 16

BOINZ recommends that for consistency, the reference to 40°C temperature should be removed to align with comments to paragraph 6.14.1.

BOINZ suggests that "TV/TMV to Table 8" be replaced with "mixing device - see Table 8" to align with BOINZ comments on Figure 5.

G12/AS1 6.14.3 Comment

BOINZ recommends that COMMENT 1 is split into two comments, because it includes two different topics. The second starting with AS/NZS 3500.4

BOINZ also suggests in COMMENT 1 the word "provisions" is replaced with "solutions" because the provisions are contained in the Building Code and not a referenced Standard.

BOINZ is concerned the detail in the Notes 2 to 4 is potentially misleading because the design of circulatory hot water systems cannot adequately address the control of legionella bacteria from the scarcity of the detail provided. The impact of legionella growth and possible legionella outbreaks from circulatory hot water systems, used mostly in highly populated buildings needs a higher level of guidance and direction than can be covered in a few short paragraphs.

BOINZ recommends that Notes 2, 3 and 4 are deleted as there is cross reference to AS/NZS 3500.4.

BOINZ acknowledges that adequate legionella control for circulatory hot water systems in AS/NZS 3500.4 is achieved by only having circulating water at a temperature above 60°C.

BOINZ suggests that warm water loops are excluded from the scope of G12/AS1 from paragraph status and note from a comment or a note.

G12/AS1 Table 7 (new Table 9)

BOINZ recommends that galvanised steel pipes are removed from this table to be consistent with the pipe materials section 2.2 and Table 1.

G12/AS1 Section 7.5

BOINZ notes the installation of pipe system is not included for Polybutylene and PEX, two of the most used plumbing pipe systems in New Zealand. What are the installation requirements for these products?

BOINZ recommends that for consistency installation information be provided Polybutylene and PEX pipe systems.

G12/AS1/AS2/AS3 Index

BOINZ recommends the Index to G12/AS1/AS2/AS3 is updated.

BOINZ note some obvious exemptions being:

- Containment backflow protection
- Expansion vessels
- Temperature control devices

5-2. Do you support the proposed amendment to Verification Method G12/VM1 to cite the Plumbing engineering services design guides loading unit method for determining maximum simultaneous flow rates for sizing water supply pipework?

☐ Yes, I support it ☐ No, I don't support it ☒ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

BOINZ, from the information provided, is uncertain what is being proposed.

BOINZ believes the proposal is incomplete because it refers to the *Plumbing Engineering Services Design Guide* for maximum simultaneous flow rates for hot and cold water pipe sizing. M*aximum simultaneous flow rates* are not listed in the guide's Contents section and there is no Index in the guide making it hard to find the necessary information.

G12/VM1 currently references AS/NZS 3500.1 with the specific sections in the Standard for pipe sizing.

BOINZ recommends consideration be given to specific referencing of only the relevant parts within the *Plumbing Engineering Services Design Guide,* making G12/VM1 clearer and more user-friendly.

5-3. What impacts would you expect on you or your business from the proposed changes?

These impacts may be economic/financial, environmental, health and wellbeing, or other areas.

BOINZ envisages the proposals with BOINZs recommendation will deliver cost effective plumbing installations for the consumer and subsequently deliver appropriate environmental and health outcomes.

5-4. Do you agree with the proposed transition time of 12 months for the proposed changes to take effect?

- ☒ Yes, it is about right
- ☐ No, it should be longer (24 months or more)
- ☐ No, it should be shorter (less than 12 months)
- ☐ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

Plumbing and drainage
Proposal 6. Plumbing and drainage system material standards

We are proposing to cite the latest manufacturing standards for plumbing and drainage system components. These proposed changes form part of regular maintenance updates to address outdated product manufacturing standard citations. In total, there are 12 new or amended standards proposed for Acceptable Solution E1/AS1, 22 for G12/AS1 and G12/AS2, and 12 for G13/AS1 and G13/AS2.

Questions for the consultation

6-1. Do you support the amendments to the following to include the proposed referenced standards and documents for manufacturing plumbing and drainage system components?

Acceptable Solutions E1/AS1 and E1/AS2 for surface water drainage system materials	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
Acceptable Solutions G12/AS1 and G12/AS2 for water supply system materials	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
Acceptable Solutions G13/AS1 and G13/AS2 for sanitary plumbing and foul water drainage system materials	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference

The list of standards is provided in the appendices to the consultation document.

If there are standards you don't support, please tell us which standards those are and any reason(s) for your choice.

Plumbing and drainage
Proposal 6. Plumbing and drainage system material standards

G13/AS1 2.1.1 Comment

BOINZ is concerned that the use of WaterMarked product should only be for their "listed" purpose and not "intended" purpose at the will of a designer/installer. BOINZ concern is with inappropriate choice and use and subsequent costly remediation and repair impacting on buildings and their owners.

BOINZ recommends that the word "intended purpose" is replaced with the word "listed purpose".

G13/AS1/AS2 graded junctions

BOINZ supports the inclusion of the 15° angle for graded discharge pipe and drain junctions.

G13/AS2 2.0.1 COMMENT

BOINZ is concerned that the use of WaterMarked product should only be for their "listed" purpose and not "intended" purpose at the will of a designer/installer. BOINZ concern is with inappropriate choice and use and subsequent costly remediation and repair impacting on buildings and their owners.

BOINZ recommends that the word "intended purpose" is replaced with the word "listed purpose".

BOINZ recommends that "intended" is replaced with "listed" or "certified" or "WaterMarked" purpose

G13/AS1/AS2/AS3/AS4 Index

BOINZ recommends that the Index to G13/AS1/AS2/AS3/AS4 should be updated to include new and amended items, such as *junctions on grade*.

Plumbing and drainage
Proposal 6. Plumbing and drainage system material standards

6-2. What impacts would you expect on you or your business from the proposed changes?
These impacts may be economic/financial, environmental, health and wellbeing, or other areas.

BOINZ envisages the proposals with BOINZ recommendation will deliver cost effective plumbing installations for the consumer and subsequently deliver appropriate environmental and health outcomes.

6-3. Do you agree with the proposed transition time of 12 months for the proposed changes to take effect?

- ☒ Yes, it is about right
- ☐ No, it should be longer (24 months or more)
- ☐ No, it should be shorter (less than 12 months)
- ☐ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

Yes, it is about right

Plumbing and drainage
Proposal 7. Resolving conflicts and editorial changes

We are proposing to amend Acceptable Solutions E1/AS1, G12/AS1, G12/AS2, G13/AS1 and G13/AS2 to make editorial changes and align requirements between compliance pathways for plumbing and drainage systems. Editorial changes may include obvious errors in the text, typos, spelling mistakes, incorrect cross-references, changes in the formatting, minor clarifications of text with minor to no impact, or other items related to current document drafting practices.

Questions for the consultation

7-1. Do you support the following amendments to the acceptable solutions to address the editorial changes and align plumbing and drainage requirements as proposed?

E1/AS1:	☒ Yes, I support it	☐ No, I don't support it	☐ Not sure/no preference
G12/AS1:	☒ Yes, I support it	☐ No, I don't support it	☐ Not sure/no preference
G12/AS2:	☒ Yes, I support it	☐ No, I don't support it	☐ Not sure/no preference
G13/AS1:	☒ Yes, I support it	☐ No, I don't support it	☐ Not sure/no preference
G13/AS2:	☒ Yes, I support it	☐ No, I don't support it	☐ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

Please see comments, suggestions, and recommendations in BOINZ submissions to the following questions:

Questions 1.1 and 1.2 Lead in plumbing products

Question 2.1 Water temperatures

Question 3.1 Protection of Potable Water

Questions 4.1 and 4.3 AS/NZS 3500 Plumbing Standards

Questions 5.1 and 5.2 Water Supply system components and

Questions 6.1 Plumbing and Drainage system materials standards

Structural stability of hollow-core floors

We are proposing changes to the compliance pathway for hollow-core floors to make new buildings safer in the event of earthquakes. The proposed change will include the removal of a deemed to comply solution for the support of hollow-core floors from Verification Method B1/VM1.

Questions for the consultation

1-1. Do you support amending Verification Method B1/VM1 Paragraph 3.1.1 as proposed to make the design of hollow-core floor supports an alternative solution?

☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

BOINZ supports the changes for the design and installation of Hollow Core Floors.

BOINZ supports the design and changes given the findings from the 2016 Kaikoura earthquake and the 2018 ReCast Floors project. However, we expected this consultation to include a solution to replace the unsatisfactory existing solution for Hollow Core Floor, including larger seating detail and fixing of Hollow Cores to the primary structure. It is vital that research funding be made available to develop a new verification method that delivers efficiencies, both in terms of prefabrication and onsite installation.

BOINZ suggests that a new verification method, which includes building code complying details for Hollow Core floors, will achieve efficiencies in the building consenting process and facilitate the construction of a greater number of buildings.

1-2. What impacts would you expect on you or your business from the proposed change?

These impacts may be economic/financial, environmental, health and wellbeing, or other areas.

While BOINZ supports the changes, the reality is BCAs may be encumbered with extra volumes of investigative work until such time a verification method for Hollow Core floors is published. The impact on concrete prefabrication in the commercial build sector will also be reasonable negatively affected until the verification method options are available.

Structural stability of hollow-core floors

1-3. Is there any support that you or your business would need to implement the proposed changes if introduced?

☒ Yes ☐ No ☐ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

The best support for BCAs is to have a verification method for Hollow Core floors.

1-4. Do you agree with the proposed transition time of 1 year for the new requirements to take effect?

☐ Yes, it is about right
☐ No, it should be longer (2 years or more)
☐ No, it should be shorter (less than 1 year)
☒ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

Given the limited options now available, BOINZ has assumed there has been a high level of consultation in respect of the one year transitional proposal. As previously stated, removing Hollow Cores as a flooring option will likely put pressure on other deemed-to-comply solutions.

Protection from fire
Proposal 1. Protection from fire for residential homes

We are proposing to increase the scope of C/AS1 to include additional types of low-rise multi-unit homes, with accompanying changes to address the associated fire risks. This proposal considered fire safety settings for all building types proposed to be covered by C/AS1 and takes into account previous feedback on the document, the latest standard for smoke alarms, and international practices for residential fire safety.

Questions for the consultation

1-1. Do you support issuing the new Acceptable Solution C/AS1 with the changes proposed to the following parts of the document?

Part 1. General	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
Part 2. Firecells, fire safety systems and fire resistance ratings	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
Part 3. Means of escape	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
Part 4. Control of internal fire and smoke spread	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
Part 5. Control of external fire spread	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
Part 7. Prevention of fire occurring	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
References, definitions, and appendices	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

BOINZ supports the move to address needed changes in respect of increased demand for higher density housing developments across New Zealand. The paradigms of where people reside and sleep have changed so the corresponding safety requirements have moved, and therefore, the public of New Zealand would expect regulations to follow. We see an improved level of clarity specifically for the new types of buildings under construction and those on the construction horizon and believe the development of appropriate compliance pathways will bring a level of purpose and clarity for these new dwelling types.

BOINZ will be doing BCA training to upskill building control officers to provide consistency of understanding and interpretation. And we would see a collaboration in the development with MBIE in this regard as being mutually beneficial, not only to the BCA environment but also to the wider design fraternity.

BOINZ supports the increase in Fire Resistance Ratings (FRR) and Interconnected Alarm Systems for low-rise multi-unit homes. However, we would encourage MBIE to look at unintended consequences in respect of detached dwellings and consequently we would anticipate industry backlash if these provisions are applied to detached dwellings.

Protection from fire
Proposal 1. Protection from fire for residential homes

Protection from fire
Proposal 1. Protection from fire for residential homes

1-2. Do you think the proposed Acceptable Solution C/AS1 covers all important aspects for protection from fire for risk group SH?

☐ Yes ☐ No ☒ Not sure/no preference

If there are additional aspects of this document that you think should be included, please tell us.

1-3. What impacts would you expect on you or your business from the proposed changes?
These impacts may be economic/financial, environmental, health and wellbeing, or other areas.

These changes will need specific additional training.

BOINZ will be doing BCA training to upskill building control officers to provide consistency of understanding and interpretation. We would see a collaboration in the development with MBIE in this regard as being mutually beneficial, not only to the BCA environment but also to the wider design fraternity.

1-4. What support would you or your business need to implement the proposed changes if introduced?

See 1-3 above.

Protection from fire
Proposal 1. Protection from fire for residential homes

1-5. Do you agree with the proposed transition time of 12 months for the proposed changes to take effect?

- ☒ Yes, it is about right
- ☐ No, it should be longer (2 years or more)
- ☐ No, it should be shorter (less than 1 year)
- ☐ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

Yes, it is about right but we would expect the sector to be well informed through a promotional campaign in respect of these changes.

Protection from fire
Proposal 2. Fire safety system standards

We are proposing to improve the protection of people and buildings by bringing the requirements for fire safety systems (fire alarms, sprinklers, smoke alarms and smoke control in air-handling systems) in line with the latest industry standards. These changes would ensure the provisions in our compliance pathways for fire safety systems are up-to-date, consistent and clear.

Questions for the consultation

2-1. Do you support the amendments to Acceptable Solutions C/AS1 and C/AS2 and Verification Method C/VM2 to reference the following standards?

NZS 4512: 2021 Fire detection and alarm systems in buildings	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
NZS 4514: 2021 Interconnected smoke alarms for houses	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
NZS 4541: 2020 Automatic fire sprinkler systems	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
AS 1668.1: 2015 Fire and smoke control in building Amendment 1	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

BOINZ agrees with the referencing of these Standards.

2-2. Are there any additional modifications to the referencing of the fire safety system standards that we should consider?

☒ Yes ☐ No ☐ Not sure/no preference

If there are modifications that you think should be included, please tell us below.

MBIE should consider and research the additional fire load associated with parked EV vehicles.

2-3. Do you support amending Acceptable Solution F7/AS1 and referring to C/AS1 and C/AS2 for requirements for warning systems?

☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

2-4. Do you support the amendments to Acceptable Solution C/AS2 for the following topics?

Domestic smoke alarms	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
Removing requirements for a landline phone	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
Removing restrictions for sprinklers to replace smoke detectors	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference
Requiring sprinkler systems to extend into car parks	☒ Yes, I support it ☐ No, I don't support it ☐ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

2-5. Do you support the editorial changes to Acceptable Solution C/AS2 and Verification Method C/VM2 for the following items?

Correcting cross referencing errors in Table 2.3	☐ Yes, I support it ☐ No, I don't support it ☒ Not sure/no preference
Combining Tables 2.2a, 2.2b, 2.2c and 2.2d into one Table 2.2	☐ Yes, I support it ☐ No, I don't support it ☒ Not sure/no preference
Moving process steps into an informative figure	☐ Yes, I support it ☐ No, I don't support it ☒ Not sure/no preference
Aligning with the proposed changes to Acceptable Solution C/AS1	☐ Yes, I support it ☐ No, I don't support it ☒ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

2-6. What impacts would you expect on you or your business from the proposed changes?
These impacts may be economic/financial, environmental, health and wellbeing, or other areas.

2-7. Do you agree with the proposed transition time of 12 months for the new requirements to take effect?

- ☐ Yes, it is about right
- ☐ No, it should be longer (24 months or more)
- ☐ No, it should be shorter (less than 12 months)
- ☒ Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

Thank you

Thanks for your feedback, we really appreciate your insight because it helps us keep pace with modern construction methods, the needs of New Zealanders and ensure buildings are safe, warm, dry, healthy and durable.

To help us continue to improve our Building Code update programme, we would appreciate any suggestions or comments you may have on what's working and how we can do better.

If you have any other comments, please leave your feedback below: