

Submission on Building Code update 2022 – Protection from Fire

Set out below are Fire and Emergency New Zealand (Fire and Emergency) comments on MBIE's Building Performance consultation document for the Building Code update 2022 – Protection from Fire. We have proposed some additional changes with the aim of ensuring new buildings better protect the safety of the people who use them.

Proposal 1

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

Fire and Emergency is proposing two additional changes to table 1.1.1.1, as explained below.

We consider that residential buildings where fewer than 6 people are paying for accommodation should be removed from risk group SH and moved to risk group SM and therefore covered by C/AS2 instead. The exclusion should be where the regular occupants outnumber those in the same household unit paying rent, this will allow for situations such as students boarding. A small building with less than 6 people can have added risk, particularly where they are all paying for accommodation and are renting by the room and therefore do not have social cohesion with others in the building or occupants of adjacent dwellings. Fire and Emergency recently attended a fatal fire in a building where people were paying by the room, while there were more than 6 people living in this situation, even if there had been less than 6 the outcome would not have changed.

We acknowledge that the definition of Outbuildings in A1 of the Building Code (as referenced within table 1.1.1.1) makes it clear these buildings are not intended for human habitation. However, with the current demand for housing we are seeing people living/sleeping in garage spaces. Use of the word 'intended' in A1 suggests such living/sleeping arrangements may be allowed even on a temporary basis when that was not the intent of the Outbuilding when consented. Sleeping in an outbuilding for any period of time without smoke detection and appropriate exits as a minimum can be dangerous. Fire and Emergency has attended two fatal fires where people have been sleeping in outbuildings in the last three years. We want to ensure that where people are living in outbuildings, they are suitably protected from the risk of fire.

We are also proposing that a note is added to C/AS1 beneath table 1.1.1.1 (and progressively other design documents as the opportunity arises) clarifying that where an outbuilding is used for the purpose of sleeping, it should be considered to be 'Housing' in its own right and meet the required standards rather than being considered an 'Outbuilding'. The main impact of this, which would have minimal cost compared to benefits, is that smoke detection would need to be installed to meet NZS4514:2021.

Should this proposal be accepted there will be other changes required throughout C/AS1, such as changes to the wording in 2.2.1.3

Part 2. Firecells, fire safety systems and fire resistance ratings

We strongly support the increase in fire resistance ratings to 60 minutes and acknowledge the role that sprinkler systems play in enabling the ratings to be reduced to 30 minutes.

Despite the increased fire resistance ratings, we are concerned with the boundary clearance remaining at 1m considering the changing nature of buildings. This concern applies to other parts of C/AS1 as well where clearances are defined. We will address our concerns regarding clearances in general here.

With densification of houses we are already seeing proposals to have structures that take up the majority of the footprint of a land parcel with different adjoining residences stacked one behind each other for the depth of the property.

While we acknowledge that there will be fire resistance ratings between adjoining homes, the collective escape width and boundary clearance may not be sufficient for people from rear properties to escape past a burning building in the block. This is particularly the case if the fire has extended out a window/door opening in the premise involved in fire. Even if people may be safe remaining in their rear properties, natural human behaviour/instinct is to want to escape, or to keep checking on the fire which may expose those individuals to the products of combustion depending on wind direction.

While it is acknowledged that C/AS1 has always allowed a 1m clearance between boundaries where a building such as a three-storey standalone house has been built, these have not been common practice. Furthermore, it has not been often that multiple three-storey standalone houses have been built side by side. Usually there have been driveway spaces on one side or another due to car parking requirements.

With the densification of houses increasing and the emerging theme of removing car parking requirements, it will become much more common to see multiple stacked multi-unit dwellings built side-by-side with minimal clearances between the boundary and each side of the building. While this could be made up of 1m clearance and then the 700mm width of an external horizontal safe path, both between the building and boundary, this still may not be sufficient.

Fire and Emergency considers that reducing the boundary clearance from 5m to 1m for buildings such as adjoining townhouses and stacked multi-unit dwellings will provide additional risk for both neighbours escaping a fire and also for firefighters having to run hoses and carry equipment to rear properties for firefighting purposes.

Despite the increased fire resistance ratings, we consider the 1m boundary gap for larger buildings does not support achieving (a) or (c) of C1. Recognising the need to reduce distances to support more/larger builds and in light of the increased fire resistance ratings, we propose reducing this gap from the current 5m clearance to 2.5m, but only where that gap is not occupied by other structures or parked vehicles.

On 7 April 2022, Fire and Emergency attended a fire in a residential building under construction in Derrimore Heights, Auckland. Due to the building still being under construction the fire loading, and therefore the fire's intensity, was not as high as if it had been occupied; however the fire still spread to damage three other buildings. These buildings were being constructed to the current C/AS1. Fire and Emergency is completing

a post-incident investigation into this incident. We will share the outcomes of that investigation with MBIE as soon as our report is completed as it may help inform appropriate clearance distances in the case of densification.

› Part 3. Means of escape

The concerns we have with means of escape mostly relate to the potential close proximity of stacked multi-unit dwellings with a single external escape path and are covered in our comments in Part 2 above.

In 3.4.2.1 we propose adding that this applies to people lawfully within the building, as per bold text, “Locking mechanisms shall not impede or prevent occupants **lawfully in the building** from moving to a safe place in the event of a fire.” This will clarify that people can deadlock their premises for security when no one is home. We also consider this addition needs to be made through the full suite of design documents as the opportunity arises.

› Part 4. Control of internal fire and smoke spread

Fire and Emergency supports the changes to Part 4 as proposed.

› Part 5. Control of external fire spread

Our concerns about fire spread mostly relate to the potential close proximity of stacked multi-unit dwellings, particularly as a combination of small unprotected areas and fire resisting glazing are permitted. Our concerns are covered in our comments for Part 2 above.

5.1.1.2 states that where an intersection angle of a building and relevant boundary is 90° or greater an unprotected area of 100% is permitted. We propose this should be amended to be greater than 90° to reduce the risk of fire transfer. This aligns with the requirement to protect 1m out in each direction where two different households intersect at 90°.

We also have some concerns that separation distances can be reduced where open-sided structures such as carports can be installed. 5.3.2 makes allowances for this and allows a clearance distance of only 0.3m where a roof area is no greater than 40m². This does not appear to allow for the fuel loading that may be within that structure, for example in 5.3.2.1 a vehicle under the carport could support fire transfer from the building and across a boundary.

› Part 6. Firefighting

Please update this section title to “Fire and Emergency vehicular access” to reflect our organisation’s name.

In 6.1.1.1 (a), if a sprinkler system is installed, a hose run limitation is not required. Despite being able to charge the sprinkler inlet, attending firefighters still need to run hoses to a fire in many cases. Therefore, there should still be an upper limitation on hose run distances where a sprinkler is installed, we propose 150m.

While no changes were made to this section, the limit on application in C5.3 – C5.8 of the Building Code needs urgent revisiting given the changing nature of buildings. This is particularly relevant to the exclusion of household units and multi-unit dwellings.

With densification, we will see larger buildings as part of C/AS1 with smaller clearances, as raised above, which will greatly compromise firefighter safety.

We accept that Building Code changes are out of scope for this consultation. However, there are interdependencies between the Code and C/AS1 meaning the proposed changes to C/AS1 cannot be looked at in isolation. In the appropriate reviews of Building Compliance Documents we would also like to see references to things like access to appropriate water supplies and hydrant locations in clear areas. Including such references in these documents will support the charging of sprinkler systems and firefighting operations with the introduction of densification.

› **Part 7. Prevention of fire occurring**

Fire and Emergency supports the changes to Part 7 as proposed.

› **References, definitions, and appendices**

Fire and Emergency supports the changes to this section as proposed.

1-2 Do you think the proposed Acceptable Solution C/AS1 covers all important aspects for protection from fire for risk group SH? If there are additional aspects of this document that you think should be included, please tell us.

Our biggest concern remains the densification and potential clearances between buildings as detailed above.

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.

There is a risk that densification will increase risk to firefighters safely being able to access and fight fires.

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

While dependent on the changes agreed, Fire and Emergency may need to make revisions to tactical resources and training. We will manage this internally and are unlikely to require support to do so.

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

The interdependencies should be considered with urgency around impacts on firefighter safety and the potential removal of exclusion of household units and multi-unit dwellings from the C Clauses of the Building Code to align with the introduction of these changes. The ability to make those changes should determine when changes to C/AS1 can be introduced.

Proposal 2

Questions for the consultation

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

- › NZS 4512: 2021 Fire detection and alarm systems in buildings
- › NZS 4514: 2021 Interconnected smoke alarms for houses
- › NZS 4541: 2020 Automatic fire sprinkler systems
- › AS 1668.1: 2015 Fire and smoke control in building Amendment 1

Fire and Emergency strongly supports these changes. The references of the most recent standards strengthen the safety outputs of C/AS1. In particular, we acknowledge the adoption of NZS4514:2021 and the higher level of protection that will provide to New Zealand families. We note the estimated cost impact has been recorded. We consider that once regulated, increased demand will create more competition in the market and drive this cost down further.

In relation to sprinklers, Fire and Emergency believes that for certain buildings NZS4517 could be used. We propose this could be an affordable option to help manage risk where there are reduced clearance distances between buildings.

We note the intent to exclude the new requirement for smoke dampers in all ducts and penetrations between fire separation as per AS 1668.1. We note the commitment to carry out a more detailed cost benefit analysis. We would ask that this analysis be completed with urgency so that inclusion of this requirement may be considered to help manage potential fire spread.

2-2 Are there any additional modifications to the referencing of the fire safety system standards that we should consider? If there are modifications that you think should be included, please tell us.

In relation to Evacuation Schemes with an internal place of safety, if NZS 4541:2020 is used, compliance is also required with NZS4503:2005 as part of the Fire and Emergency New Zealand (Fire Safety, Evacuation Procedures, and Evacuation Schemes) Regulations 2018. It would be helpful if your suite of compliance documents cross-references that when an evacuation scheme is required with a place of safety inside.

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

Fire and Emergency supports this change.

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

› Domestic smoke alarms

Yes, Fire and Emergency strongly supports this change.

› Removing requirements for a landline phone

A reference should be included that ensures a method of contacting Fire and Emergency is in place where a building is outside of cell-phone coverage. The current removal of the copper line telephone network has highlighted challenges for some buildings in remote locations being able to maintain a connection for their fire alarms or to call 111.

› Removing restrictions for sprinklers to replace smoke detectors

Fire and Emergency supports this change.

› Requiring sprinkler systems to extend into car parks

Fire and Emergency supports this change.

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
- › Combining Tables 2.2a, 2.2.b, 2.2c and 2.2d into one Table 2.2
- › Moving the design sequence process steps into an informative figure
- › Aligning with the proposed changes to Acceptable Solution C/AS1

Fire and Emergency supports all of the above changes.

2-6 What impacts would you expect on you or your business from the proposed options?

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

We will need to update our promotional material on smoke alarms. There may also be some consequential legislative amendments that Fire and Emergency and MBIE should partner on – such as updating smoke alarm requirements in the Residential Tenancies Act so that for consistency they also reflect compliance with NZS4514:2021.

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

Consideration should be given to the time required to do a detailed cost-benefit analysis on the requirement for smoke dampers in all ducts and penetrations between fire separation as per AS 1668.1 to see if that can be included in these changes.

SIGNED by

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