



Determination 2019/010

Regarding the code compliance of an intertenancy wall in an apartment building with respect to sound transmission, at 200 Pilkington Road, Point England, Auckland

Summary

This determination considers the level of sound attenuation to a wall between two units in an apartment building. The level of sound attenuation is less than that required in the relevant Verification Method for Clause G6 Airborne and impact sound of the Building Code.

1. The matter to be determined

1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004¹ (“the Act”) made under due authorisation by me, Katie Gordon, Manager Determinations, Ministry of Business, Innovation and Employment (“the Ministry”), for and on behalf of the Chief Executive of the Ministry.

1.2 The parties to the determination are:

- the owner of the building F Wang (“the applicant”)
- Auckland Council (“the authority”), carrying out its duties as a territorial authority or building consent authority.

1.3 The application for this determination arises from the authority’s decision to refuse to issue a code compliance certificate for the construction of the building because it considers of the level of sound attenuation of the intertenancy wall between units 5 and 6 of the building (“the unit 5 and 6 intertenancy wall”) does not comply with Building Code Clause² G6 Airborne and impact sound. The applicant requested that the authority grant a modification (or waiver) of Clause G6, but the authority believes there are no grounds for a modification (or waiver) of the Building Code in respect of the unit 5 and 6 intertenancy wall.

1.4 I therefore consider the matters to be determined³ are:

- whether the unit 5 and 6 intertenancy wall complies with Building Code Clause G6.3.1
- whether the authority was correct to refuse to grant a modification of Building Code Clause G6.3.1 in respect of the intertenancy wall.

¹ The Building Act, Building Code, Acceptable Solutions, past determinations and guidance documents issued by the Ministry are all available at www.building.govt.nz or by contacting the Ministry on 0800 242 243.

² Unless otherwise stated, references to sections are to sections of the Act and references to clauses are to clauses of the Building Code.

³ Under sections 177(1)(a), 177(1)(b) and 177(3)(a) of the Act

- 1.5 The determination is limited only to the sound attenuation of the unit 5 and 6 intertenancy wall.
- 1.6 In making my decision, I have considered the submissions from the parties and the other evidence in this matter.

2. The building and background

2.1 The building

- 2.1.1 The building is a newly constructed three-storey apartment building with two units on each level.
- 2.1.2 The building contains a stairwell on the north side of the building, with two units on each level – one on each side of the stairwell i.e., one unit on the east side of the building and one unit on the west side of the building. The two units on each level have the same basic configuration, with minor differences between each level.
- 2.1.3 The intertenancy walls are fire-rated and constructed from a proprietary modular expanded polystyrene formwork filled with concrete and lined with plasterboard. The concrete itself is nominally 150mm thick.
- 2.1.4 Units 5 and 6 are on the third storey of the building. The unit 5 and 6 intertenancy wall runs from the stairwell to the south of the building. The kitchen and dining room are adjacent to the unit 5 and 6 intertenancy wall in both units.

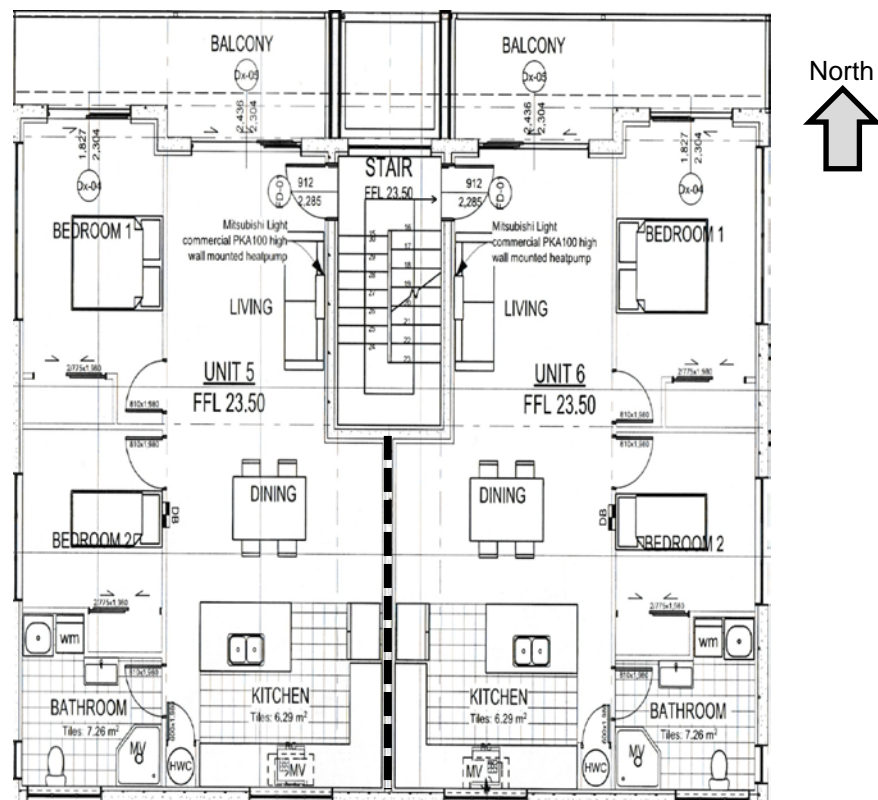


Figure 1: Layout of units 5 and 6 – the intertenancy wall is shown as a heavy dotted line (not to scale)

2.2 The background

- 2.2.1 The authority received the application for a building consent for the construction of the apartment building on 11 May 2016. The authority's lodgement check sheet dated 12 May 2016 notes 'N/A' for 'acoustic design; reports and plans'.
- 2.2.2 On 21 June 2016, the authority requested further information about the building consent application in respect of a number of items, including the Sound Transmission Class and Impact Insulation Class ratings of the intertenancy walls and floors to show compliance with Clause G6.
- 2.2.3 Building consent B/2016/4706 was issued on 1 August 2016. It was a condition of the building consent that:
- A test certificate is to be submitted by the acoustic engineer to demonstrate compliance with the acoustic requirements, specified in the approved building consent application.
- The consent documentation contains little information on how compliance with Clause G6 is to be achieved.
- 2.2.4 Following the building's completion the applicant applied for a code compliance certificate and on 7 March 2018, the authority wrote to the applicant stating that the information required to support the application for a code compliance certificate was not complete. The authority asked the applicant to provide a number of items, including a report or test certificate from an acoustic engineer to confirm compliance of the building with Clause G6.
- 2.2.5 The applicant contracted an acoustic engineer ("the first acoustic engineer") to provide an assessment of noise transmission between units in the building using field sound transmission class (FSTC) tests and field impact insulation class (FIIC) tests carried out in sample locations in the building. The first acoustic engineer provided a report dated 21 March 2018.
- 2.2.6 The results of the tests were as follows⁴:
- FSTC test results
- Unit 4 (living area) and unit 6 (living area) intertenancy floor – FSTC 59 decibels ("dB") (noted as "Pass")
 - Unit 1 (bedroom) and unit 2 (bedroom) intertenancy wall – FSTC 51dB (noted as "Pass")
 - Unit 5 (kitchen) and unit 6 (kitchen) intertenancy wall – FSTC 46dB (noted as "4dB below G6")
- FIIC test results
- Unit 4 (living area) and unit 6 (kitchen) intertenancy floor – FIIC 41dB (does not comply with Clause G6)
- 2.2.7 With respect to the unit 5 and 6 intertenancy wall, the report stated:
- The wall tested on the ground floor meets the required rating. The same intertenancy wall, when tested at the third (top) floor, yielded a lower result below the required rating.

⁴ The report misstates some unit numbers. The unit numbers have been corrected for the purposes of reporting the results in this determination.

Considering the structure of the intertenancy wall is supposed to be the same throughout the floors, it is assumed (and noted subjectively during the tests) that noise flanking is the most likely cause of the degraded performance at the third floor.

While the walls themselves can be deemed to pass the required criteria, an issue exists at the top floor whereby noise seems to be flanking around the wall.

Notwithstanding that, the intertenancy wall on the third floor adjoins mostly the kitchen area and the dining room, these being less sensitive to noise than bedrooms.

- 2.2.8 Remedial work comprising installation of nylon tiles was subsequently carried out to the kitchen and bathroom floor of unit 6.
- 2.2.9 The applicant contracted a second acoustic engineer to re-test the noise transmission in the sample locations that failed the original test. A report was provided by the second acoustic engineer on 26 June 2018.
- 2.2.10 The unit 4 and unit 6 intertenancy floor achieved FIIC 59dB in the test, above the minimum requirement of Clause G6.
- 2.2.11 The unit 5 and unit 6 intertenancy wall achieved FSTC 47dB in the test, 3dB below the minimum required by Verification Method for Clause G6 being G6/VM1. The report stated that:
- ... the FSTC 50 criterion of the [G6/AS1] offers a relatively high level of amenity. In practical terms, such a wall would result in high levels from a TV down to levels that were considered reasonable, and in all likelihood, inaudible in an adjacent apartment. High levels of amplified music would however, likely remain audible. By comparison, a wall achieving FSTC 45 would control yelling in an adjacent unit to levels that would likely be inaudible to a neighbour with a good level of acoustic privacy between units.
- Should the wall be improved to 3dB across all frequencies, its performance would increase to a compliant FSTC 50. Given that 3dB is considered the smallest change noticeable to the average person, it can be seen that the wall in fact performs quite well.
- 2.2.12 There was further correspondence between the parties about the code compliance certificate on 18 May 2018 and 17 August 2018. The applicant requested that the authority consider passing the unit 5 and 6 intertenancy wall as the tenants were all happy with the low noise level.
- 2.2.13 The Ministry received an application for determination on 5 October 2018.

3. The submissions and the draft determination

- 3.1 The application for determination included:
- supporting letters from tenants about their satisfaction with the sound levels in the building and an account from the previous project manager describing comments from tenants about their satisfaction with the sound levels in the building
 - the report by the second acoustic company
 - a set of building plans, however, I note this copy was not the consented or as-built plans, rather a previous version.
- 3.2 On 10 October 2018, the Ministry wrote to the parties requesting further information:
- from the authority; a copy of the building consent and advice about the status of the consent

- from the applicant; information about why the intertenancy wall failed the acoustic test.
- 3.3 On 10 October 2018, the applicant made a submission about the background to the application for a code compliance certificate, and provided a copy of the first acoustic report and the building consent.
- 3.4 The authority acknowledged the application on 12 October 2018.
- 3.5 On 2 November 2018, the Ministry wrote to the parties requesting further information:
- from the applicant; further information about the acoustic testing and the remedial work carried out
 - from the authority; a copy of the building consent addendum including plans and specifications detailing the acoustic treatment, and clarification of the authority's view with respect to compliance with Clause G6.
- 3.6 The applicant made a submission on 9 November 2018. The submission included an email to the applicant from the former project manager dated 6 November 2018 about the acoustic testing and remedial work carried out. The project manager stated that the first acoustic company had mislabelled the units in the report and that the remedial work involved fitting and gluing approved nylon tiles to the bathroom and kitchen floor of unit 6. The project manager also stated that the unit 5 and 6 intertenancy wall was not required to be tested, that all the walls were constructed in the same manner, and that it was his "understanding of the regulations that rooms above non-living areas like bathrooms are not required to be tested".
- 3.7 The authority provided a copy of the property file on 20 November 2018.
- 3.8 Following a further request from the Ministry on 4 December 2018, the authority provided a submission on 12 December 2018. The authority noted that the information the applicant supplied confirmed the unit 5 and 6 intertenancy wall did not comply, and that the applicant wanted the Clause G6 requirements waived because the result of the noise transmission test was only 3dB below the Building Code requirement. The authority stated its view was that these are not grounds for a waiver, and it was unable to issue a code compliance certificate as the consented building work does not meet the Building Code requirements.
- 3.9 The authority also provided a copy of emails between the applicant and authority dated 7 March 2018, 18 May 2018 and 17 August 2018, and a copy of the reports by the first acoustic company and the second acoustic company.
- 3.10 On 21 December 2018, the Ministry sought confirmation from the authority that the only matter in dispute was the level of sound attenuation to the unit 5 and 6 intertenancy wall. The authority confirmed this was the case on 7 January 2018.
- 3.11 The draft determination was issued to the parties for comment on 14 February 2019. The authority accepted the draft without comment on 18 February 2019.
- 3.12 The owner responded on 11 March 2019 saying she would seek expert advice to resolve the matter.

4. Discussion

4.1 Compliance of the unit 5 and 6 intertenancy wall

4.1.1 Section 17 of the Act requires that ‘all new building work must comply with the building code’.

4.1.2 The relevant Building Code clause is Clause G6. The objective, functional requirement and performance requirements of Clause G6 are:

Objective

G6.1 The objective of this provision is to safeguard people from illness or injury or loss of amenity as a result of undue noise being transmitted between abutting occupancies.

Functional requirement

G6.2 Building elements which are common between occupancies, shall be constructed to prevent undue noise transmission from other occupancies or common spaces, to the habitable spaces of household units.

Performance

G6.3.1 The Sound Transmission Class of walls, floors and ceilings, shall be no less than 55.

G6.3.2 The Impact Insulation Class of floors shall be no less than 55.

4.1.3 The Verification Method for Clause G6, G6/VM1 says performance for airborne sound insulation and impact sound insulation shall be verified by named standard field tests where the test results “shall be within 5dB of the performance requirement”; being a minimum of 50dB for both the airborne sound insulation (aka FSTC) and impact sound insulation (aka FIIC).

4.1.4 The reports provided by the applicant confirm the unit 5 and 6 intertenancy wall does not meet Clause G6.3.1 of the Building Code because the FSTC ratings achieved were 46dB in the first test, and 47dB in the second test.

4.2 Waiver or modification of Clause G6 of the Building Code

4.2.1 Under section 67 of the Act an authority has the power to grant a modification (or waiver) of the Building Code, but the grant of such a modification must be reasonable, taking account of the circumstances of the particular situation.

4.2.2 Previous determinations have established that a waiver or modification may be granted only when it is ‘explicitly or implied necessary for the granting of a building consent in respect of the building work concerned’⁵ and that ‘compelling reasons must exist that support the view that a waiver is appropriate’⁶. Determination 2006/085⁷ clearly states that a territorial authority may grant such a waiver or modification under section 67 only when it is reasonable to do so in the circumstances.

⁵ Determination 2007/110 Building consent for a house on land subject to coastal hazards (17 September 2007)

⁶ Determination 2012/049 Regarding the refusal to issue a code compliance certificate for a 16-year-old house with monolithic cladding (12 July 2012)

⁷ Determination 2006/085 Refusal of a code compliance certificate for a building with a plywood cladding system at a house (4 October 2006)

4.2.3 Determination 2015/022⁸ established the factors that should be taken into account when an authority considers a modification applied to the circumstances of an individual case. It described the factors and their application as follows:

There are a number of factors within the framework an authority should balance when considering whether it is reasonable to grant a modification; no single factor should be isolated. This framework can be used as a methodology for deciding whether it is reasonable to grant a modification; no single factor should be isolated. This framework can be used as a methodology for deciding whether it is 'reasonable' to grant a modification:

- The extent and possible consequence of the non-compliance with the specific performance clause.
- The availability of other reasonably practicable solutions that would result in the building work fully complying with the Building Code, and associated costs.
- Any special and unique circumstances of the building work subject to the waiver or modification.
- The extent to which the modification will still be consistent with the purposes and principles of the Act.
- The modification complying with the relevant objective and functional requirement of the specific clause(s) of the Building Code.

In granting a waiver or modification factors such as location, use of a building, and design features make the modification specific to the building and not appropriate to be applied to other buildings with a different set of features.

4.2.4 Applying these factors to this situation, I note:

Factor	Comment
The extent and possible consequence of the non-compliance with the specific performance clause	The wall achieved a rating of 46 to 47dB compared to the minimum requirement of 50dB. An increase of 3dB represents a doubling of sound intensity and is a noticeable difference in noise level (refer paragraph 4.2.6).
The availability of other reasonably practicable solutions that would result in the building work fully complying with the Building Code, and associated costs	Solutions for intertenancy walls to meet the Sound Transmission Class requirements of the Building Code are readily available. Other walls in the building achieved the required minimum. In addition, there are modifications that can be made to the as-built intertenancy wall to achieve compliance.
Any special and unique circumstances of the building work subject to the waiver or modification	I am not aware of any special or unique circumstances such as location, users, and use of the building that should be taken account of with respect to the proposed modification.
The extent to which the modification will still be consistent with the purposes and principles of the Act	There is a strong emphasis in the Act on the importance of household units. Section 4(2)(a)(i) refers to 'the importance household units play in the lives of people who use them', 'the importance of the Building Code as it relates to household units', and 'the need to ensure that household units comply with the Building Code'. I consider the applicant did not provide the authority sufficient justification regarding the effect of a modification of Clause G6.3.1 on the purposes and principles of the Act

⁸ Determination 2015/022 Regarding the authority's refusal to grant a modification of Clause 3.4(a) of the Building Code in respect of materials used for internal surface linings at a function centre (14 May 2015)

Factor	Comment
	<p>when proposing a modification. A modification of Clause G6.3.1 in respect of non-compliance of the intertenancy wall of unit 5 and 6 would not appear to align with the purposes and principles of the Act, given the importance of household units prescribed in these sections of the Building Act.</p>
<p>The modification complying with the relevant objective and functional requirement of the specific clause(s) of the Building Code</p>	<p>Objective G6.1 is 'The objective of this provision is to safeguard people from illness or injury or loss of amenity as a result of undue noise being transmitted between abutting occupancies.' Functional requirement G6.2 is 'Building elements which are common between occupancies, shall be constructed to prevent undue noise transmission from other occupancies or common spaces, to the habitable spaces of household units.'</p> <p>The first acoustic engineer stated that:</p> <ul style="list-style-type: none"> • the unit 5 and 6 intertenancy wall has a lower result than the ground floor intertenancy wall, which is of the same construction • noise flanking is the most likely cause of the degraded performance at the third floor and the walls can be deemed to pass although an issue exists at the top floor whereby noise seems to be flanking around the wall • the unit 5 and 6 intertenancy wall on the third floor adjoins mostly the kitchen and dining areas, which are less sensitive to noise than bedrooms. <p>The second acoustic engineer noted that if the performance of the wall was improved by 3dB across all frequencies, it would be compliant.</p> <p>I note that the applicant has provided information that demonstrates the current tenants of the affected units find the units to be quiet. However, it is not clear whether the tenants find the units satisfactory because the levels of noise made by the current tenants are low.</p> <p>Housing ownership and rental accommodation in New Zealand changes comparatively frequently and the current occupant's view of compliance cannot be considered as a factor in the assessment of compliance</p> <p>I consider the applicant has not provided sufficient justification that the unit 5 and 6 intertenancy wall meets the functional requirement that the wall prevents undue noise transmission. I note that no other actions or mitigating features have been identified.</p>

4.2.5 I consider the framework described in Determination 2015/022 applied to the current case establishes that a modification of Clause G6.3.1 cannot be reasonably granted. I consider there are changes that the applicant can undertake to ensure compliance with Clause G6. I appreciate these changes will come at a cost to the applicant, but in consideration of all the circumstances of this case I do not consider it reasonable to grant a modification of Clause G6.3.1.

4.2.6 The second acoustic engineer's view is that 3dB is considered the smallest change noticeable to the average person, and that the wall "in fact performs quite well". The decibel (dB) scale is logarithmic and not linear. An increase of 3dB represents a doubling of sound intensity, or acoustic power. It is a noticeable difference in noise level and I do not consider the 3dB shortfall can be treated as insignificant. 50dB is the minimum level of acoustic separation required between occupancies under Clause G6.3.1 when applying the sound transmission field test cited in G6/VM1, and I do not consider it reasonable in this instance to modify Clause G6.3.1 to lower that minimum figure.

5. The decision

5.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the unit 5 and 6 intertenancy wall does not comply with Building Code Clause G6.3.1.

5.2 In regards to the proposed modification to the Building Code for Clause G6.3.1, I determine that the authority was correct to refuse to grant a modification of Clause G6.3.1 for building consent number B/2016/4706.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 9 April 2019.

Katie Gordon
Manager Determinations

Appendix: The legislation

A.1 Relevant provisions of the Building Act 2004

A1.1 The relevant sections of the Act discussed in this determination include:

3 Purposes

This Act has the following purposes:

(a) to provide for the regulation of building work, the establishment of a licensing regime for building practitioners, and the setting of performance standards for buildings to ensure that— ...

(ii) buildings have attributes that contribute appropriately to the health, physical independence, and well-being of the people who use them; ...

4 Principles to be applied in performing functions or duties, or exercising powers, under this Act ...

(2) In achieving the purpose of this Act, a person to whom this section applies must take into account the following principles that are relevant to the performance of functions or duties imposed, or the exercise of powers conferred, on that person by this Act:

(a) when dealing with any matter relating to 1 or more household units,—

(i) the role that household units play in the lives of the people who use them, and the importance of—

(A) the building code as it relates to household units; and

(B) the need to ensure that household units comply with the building code: ...

17 All building work must comply with building code

All building work must comply with the building code to the extent required by this Act, whether or not a building consent is required in respect of that building work.

67 Territorial authority may grant building consent subject to waivers or modifications of building code

(1) A building consent authority that is a territorial authority may grant an application for a building consent subject to a waiver or modification of the building code.

(2) A waiver or modification of the building code under subsection (1) may be subject to any conditions that the territorial authority considers appropriate. ...

A1.2 The relevant sections of the Building Code discussed in this determination are:

Objective

G6.1 The objective of this provision is to safeguard people from illness or injury or loss of amenity as a result of undue noise being transmitted between abutting occupancies.

Functional requirement

G6.2 Building elements which are common between occupancies, shall be constructed to prevent undue noise transmission from other occupancies or common spaces, to the habitable spaces of household units.

Performance

G6.3.1 The Sound Transmission Class of walls, floors and ceilings, shall be no less than 55.

G6.3.2 The Impact Insulation Class of floors shall be no less than 55.