

Determination 2007/38

Determination regarding a code compliance certificate for two townhouses at 125 Muritai Street, Tahunanui, Nelson



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, John Gardiner, Determinations Manager, Department of Building and Housing (“the Department”), for and on behalf of the Chief Executive of that Department. The applicant is the owner Mr Howard (“the applicant”) and the other party is the Nelson City Council (“the territorial authority”).
- 1.2 The matter for determination is the territorial authority’s decision to refuse to issue a code compliance certificate for two townhouses (designated in this determination as the front unit and the rear unit) because it was not satisfied that they complied with clauses B2 “Durability” and E2 “External Moisture” of the Building Code² (First Schedule, Building Regulations 1992).
- 1.3 The questions to be determined are whether:

¹ The Building Act 2004 is available from the Department’s website at www.dbh.govt.nz.

² The Building Code is available from the Department’s website at www.dbh.govt.nz.

1. The cladding as installed to the walls of the units (“the cladding”) complies with clause E2 (see sections 177 and 188 of the Act). By “the cladding as installed” I mean the components of the system (such as the backing materials, the flashings, the joints and the coatings) as well as the way the components have been installed and work together.
 2. The elements that make up the building work comply with clause B2, taking into account the age of the buildings.
- 1.4 In making my decision, I have considered the submissions of the parties, the report of the independent expert commissioned by the Department to advise on this dispute (“the expert”), and the other evidence in this matter. I have evaluated this information, in regard to the cladding, using a framework that I describe more fully in paragraph 6.1.
- 1.5 In this determination, unless otherwise stated, references to sections are to sections of the Act and references to clauses are to clauses of the Building Code.

2. The building

- 2.1 The building work consists of two single-storey detached townhouses situated on a level site, which is in a medium wind zone for the purposes of NZS 3604³. Each unit is relatively simple in plan and form. The construction is conventional light timber frame constructed on concrete slabs. The pitched roofs have valley junctions and generally have 750mm wide eaves projections. A small timber deck is constructed outside each living room.
- 2.2 According to the expert, the external wall framing timber is untreated Douglas Fir.
- 2.3 The external walls of the units are clad with stucco plaster direct fixed through the building wrap to the framing, and finished with a paint system.
- 2.4 I have not received any producer statements or warranties in relation to the cladding.

3. Sequence of events

- 3.1 The territorial authority issued a single building consent for the two units on 17 October 1994.
- 3.2 The territorial authority carried out various inspections of the property during construction. On 26 July 2006 the territorial authority wrote to the applicant, stating that due to the time that had elapsed since construction of the units had commenced, it could not be satisfied on reasonable grounds that the building work complied with clauses B2 and E2. Accordingly, the territorial authority could not issue a code compliance certificate.

³ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

- 3.3 The territorial authority has not issued a notice to fix as required by section 435.
- 3.4 An application for a determination was received by the Department on 15 September 2006.

4. The submissions

- 4.1 Neither party made a submission.
- 4.2 The applicant forwarded copies of:
- the plans and specifications
 - some consent documentation and inspection records
 - the letter from the territorial authority dated 26 July 2006.
- 4.3 Copies of the evidence were provided to each of the parties.
- 4.4 A copy of the draft determination was forwarded to the parties on 20 December 2006. Both parties accepted the draft without comment.

5. The expert's report

- 5.1 The expert inspected the units on 10 November 2006, and furnished a report that was completed on 14 November 2006. The expert noted that the workmanship is only of average quality and the quality of the stucco plaster is poor. The expert removed the cladding at several locations to observe the construction. I am prepared to accept that the exposed details would apply to other similar situations throughout both units.
- 5.2 The expert took internal non-invasive moisture readings throughout both units and no elevated readings were recorded. The expert then took invasive moisture readings into the framing of both units and the following elevated readings were recorded:
- 20% at one location in the front unit
 - 21% at 2 locations in the rear unit.
- 5.3 The expert made the following specific comments on the cladding:

Both units

- The stucco mesh embedment into the scratch coat is poor and the top coat is de-laminating from the scratch coat.
- There is no evidence of shrinkage control joints at window openings.
- The base of the cladding is too close to the ground at some locations.

- The external joinery units lack jamb and sill flashings and the stucco is carried beneath the frames.
- The meter-box lacks a head flashing and has inadequate perimeter sealing.
- Some penetrations through the cladding are inadequately sealed.
- The soffits are unpainted at some locations.
- Some downpipe brackets are not connected.

The front unit

- The plaster is in a poor condition over the entry area foundation wall.

The rear unit

- The scratch coat has low compressive strength and is crumbly.
- The stucco is heavily cracked in some locations.
- No sealant bead is installed over the heads of the exterior joinery units.

5.4 The expert also commented on other building elements as follows.

- The laundry tub in the front unit is not fixed to the wall nor is it sealed at the wall junctions.
- The gully trap at the south wall of the front unit is set too close to the ground level of the planter box.
- There is mould on the bathroom walls of the rear unit and there is also evidence of moisture damage.

5.5 Copies of the expert's report were provided to each of the parties on 22 November 2006.

Matter 1: The Cladding

6 Evaluation for code compliance

6.1 Evaluation framework

6.1.1 In evaluating the design of a building and its construction, it is useful to make some comparisons with the relevant Acceptable Solution⁴, in this case E2/AS1, which will assist in determining whether the features of these units are code compliant. However, in making this comparison, the following general observations are valid:

⁴ An Acceptable Solution is a prescriptive design solution approved by the Department that provides one way, but not the only way, of complying with the Building Code. The Acceptable Solutions are available from the Department's website at www.dbh.govt.nz.

- Some Acceptable Solutions cover the worst case, so that they may be modified in less extreme cases and the resulting alternative solution will still comply with the Building Code.
- Usually, when there is non-compliance with one provision of an Acceptable Solution, it will be necessary to add some other provision to compensate for that in order to comply with the Building Code.

6.1.2 The approach in determining whether building work is weathertight and durable and is likely to remain so, is to apply the principles of weathertightness. This involves the examination of the design of the building, the surrounding environment, the design features that are intended to prevent the penetration of water, the cladding system, its installation, and the moisture tolerance of the external framing. The Department and its antecedent, the Building Industry Authority, have also described weathertightness risk factors in previous determinations⁵ (refer to Determination 2004/1 *et al*) relating to cladding and these factors are also used in the evaluation process.

6.1.3 The consequences of a building demonstrating a high weathertightness risk is that building solutions that comply with the Building Code will need to be more robust. Conversely, where there is a low weathertightness risk, the solutions may be less robust. In any event, there is a need for both the design of the cladding system and its installation to be carefully carried out.

6.2 Weathertightness risk

6.2.1 In relation to these characteristics I find that both units:

- are built in a medium wind zone
- are single storey
- are relatively simple in plan and form
- have 750mm wide eaves projections
- have one small external deck
- have external wall framing that is unlikely to be treated to a level that provides resistance to the onset of decay if the framing absorbs and retains moisture.

6.2.2 When evaluated using the E2/AS1 risk matrix, all elevations of both units demonstrate a low weathertightness risk. The matrix is an assessment tool that is intended to be used at the time of application for consent, before the building work has begun and, consequently, before any assessment of the quality of the building work can be made. Poorly executed building work introduces a risk that cannot be taken into account in the consent stage but must be taken into account when the building as actually built is assessed for the purposes of issuing a code compliance certificate.

⁵ Copies of all determinations issued by the Department can be obtained from the Department's website.

7 Discussion

- 7.1 Taking into account the expert's report, I am satisfied that the current performance of the cladding installed on both units is inadequate because it has not been installed according to good trade practice. In particular, the cladding is at present allowing water penetration into the walls through defects in the cladding and the cladding demonstrates the key defects listed in paragraph 5.3. There are also other defects that are listed in paragraph 5.4.
- 7.2 While I have not identified significant weathertightness risk factors in these units, the presence or absence of such factors has to be considered in combination with the significant faults identified in the cladding system. The identified faults indicate that the structure does not have sufficient provisions that would compensate for the lack of a drained and ventilated cavity. Consequently, I am not satisfied that the cladding system as installed on both units complies with either clause B2 or clause E2 of the Building Code.

8 Conclusion

- 8.1 I find that, because of the extent and apparent complexity of the faults that have been identified with the cladding, I am unable to conclude, with the information available to me, that remediation of the identified faults, as opposed to partial or full re-cladding, could result in compliance with clauses B2 or E2. I consider that final decisions on whether code compliance can be achieved by either remediation or re-cladding, or a combination of both, can only be made after a more thorough investigation of the cladding. This will require a careful analysis by an appropriately qualified expert. Once that decision is made, the chosen remedial option should be submitted to the territorial authority for its comment and approval. If the territorial authority chooses to reject the proposal, then the applicant is entitled to seek a further determination on whether the proposed remedial work will lead to compliance with the requirements of clauses B2 and E2.

Matter 2: The durability considerations

9 Discussion

- 9.1 The territorial authority has concerns about the durability, and hence the compliance with the building code, of the elements of the building, taking into consideration that the construction of the building was started in 1994.
- 9.2 As the cladding defects are so evident and in the absence of any evidence confirming compliance, I cannot conclude that the remainder of the building elements used in either of the units complied with clause B2 when the units were substantially completed.

10 The decision

- 10.1 In accordance with section 188 of the Act, I hereby determine that neither of the units comply with clauses B2 and E2 of the Building Code, and accordingly confirm the territorial authority's decision to refuse to issue a code compliance certificate.
- 10.2 I note that the territorial authority has not issued a notice to fix as required by section 435. A notice to fix should be issued that requires the applicant to bring both buildings into compliance with the Building Code, identifying the defects listed in paragraphs 5.3 and 5.4, but not specifying how those defects are to be fixed. That is a matter for the applicant to propose and for the territorial authority to accept or reject. It is important to note that the Building Code allows for more than one method of achieving compliance.
- 10.3 I would suggest that the parties adopt the following process to meet the requirements of paragraph 10.2. Initially, the territorial authority should issue the new notice to fix. The owner should then produce a response to this in the form of a detailed proposal, produced in conjunction with a competent and suitably qualified person, as to the rectification or otherwise of the specified issues. Any outstanding items of disagreement can then be referred to the Chief Executive for a further binding determination.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 11 April 2007.

John Gardiner
Determinations Manager