

Determination 2006/123

Determination regarding a code compliance certificate for a house at 222A Pukemapu Road, RD3, Tauranga



1. The matters 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 builder Mr Houthuyzen, acting on behalf of the building owners (“the applicants”) and the other party is the Western Bay of Plenty District 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 a house because it was not satisfied that it complied with clauses B2 “Durability” and E2 “External Moisture” of the Building Code² (First Schedule, Building Regulations 1992).

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.

- 1.3 The matters to be determined are whether:

Matter 1: The cladding

The cladding as installed to the walls of the building (“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.

Matter 2: The durability considerations

The elements that make up the building work comply with clause B2, taking into account the age of the building.

- 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 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 a single-storey detached house situated on a level site, which is in a high wind zone for the purposes of NZS 3604³. The house is relatively simple in plan and form. The construction is conventional light timber frame constructed on concrete slabs. The pitched roofs have valley and wall-to-roof junctions and 600mm wide eaves projections. The roof also extends over the main entry.
- 2.2 I have not received any information as to the treatment, if any, of the external wall framing timber.
- 2.3 The external walls of the house are clad with “Harditex” fibre-cement sheets fixed through the building wrap to the framing, and finished with an “Equus” textured plaster and painted system.
- 2.4 The textured finish applicator issued a producer statement dated 29 June 2004 for the “Equus” coatings and the builder issued a producer statement dated 16 August 2006 for the “Harditex” cladding system. This noted the cladding and coating system was finished on 13 October 1999.

³ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

3. Sequence of events

- 3.1 The territorial authority issued a building consent on 1 December 1997.
- 3.2 The territorial authority carried out various inspections of the property during its construction. The territorial authority had written to the builder on 8 May 2003 noting what actions might ensue from a final inspection and undertook a final building inspection on 24 April 2004, which the building work did not pass.
- 3.3 In two e-mails to the territorial authority dated 14 November 2004 and 13 December 2004, the builder noted that the territorial authority had inspected the house and had approved all items with the exception of the lack of 2 smoke alarms and a producer statement for the protective coating. (These two items were noted by the territorial authority in a signed note dated 26 April 2004). The builder stated the he had delivered the requested producer statement to the territorial authority on 12 July 2004.
- 3.4 The territorial authority wrote to the builder on 16 February 2005, stating that the territorial authority would be prepared to consider issuing a code compliance certificate when the following was completed:

1. All cracks in external cladding to be cleaned out, filled with flexible sealant and re-painted.
2. A head flashing to be installed over the garage door.
3. A producer statement is required confirming that the Harditex sheets, heads cills and jamb flashings were installed to the manufacturer's requirements in place at the time.

Please note that any Code Compliance Certificate issued will exclude Section "E2 – Durability" (*sic*), due to the age of the building.

(As this reference relates to the age of the building, I believe that the correct code reference is "B2 – Durability".)

- 3.5 The applicant engaged a consultant to inspect and report on the property. The consultant inspected the building on 17 May 2006 and provided a report that was also dated 17 May 2006. The report described the building and noted that there was minor cracking in the cladding. The report indicated that, based on non-invasive testing, no high moisture readings were recorded throughout the building.
- 3.6 The builder wrote to the territorial authority on 17 April 2006, noting that the owners wished to sell the property and described how cracks in the cladding had been rectified. However, the repairs to the vertical joins had failed to a minor extent. The builder queried whether a producer statement relating to the cladding sheet fixing was relevant if a code compliance certificate was issued that did not cover clause E2 (again, I believe that this reference should be B2).

3.7 The builder wrote again to the territorial authority on 18 April 2006 following a meeting with the territorial authority that day, stating that he had been advised that the re-cladding of the house should be a last resort. The builder did not believe that a certificate of acceptance or a determination request were the correct approaches to the issues.

3.8 The territorial authority wrote to the applicants on 12 July 2006, stating that it was unable to issue a code compliance certificate. The territorial authority also noted that:

In this case the building is clad in monolithic style and Council is not satisfied on reasonable grounds that it complies with the Functional Requirement and the Performance Requirement of Building Code Clause E2 External Moisture.

The territorial authority noted that the alternatives available to the applicants in order to obtain a code compliance certificate were:

1. Removal of the monolithic-style cladding and replacement either with alternative non-monolithic cladding, or monolithic cladding with a suitable moisture management system (a drained cavity is one possible method). Please note that this must be carried out under a building consent.
2. An application for an amendment to the current building consent may be acceptable provided it is less than two years old.
3. You may apply to the Building Industry Authority (*sic*) for a Determination in this matter . . .

3.9 The territorial authority has not issued a notice to fix as required by section 435.

3.10 An application for a determination was received by the Department on 20 September 2006.

4. The submissions

4.1 In a covering letter to the Department, the applicants inquired about the determination process and what results could ensue from a determination decision. The builder described the background to the matters in question and the repairs that had been carried out.

4.2 The applicants forwarded copies of:

- the plans and specifications
- some consent documentation and inspection records
- the correspondence with the territorial authority
- the consultant's report of 17 May 2006
- the two producer statements

- some manufacturer's instructions
- photographs showing aspects of the construction of the house.

4.3 Copies of the submission and other evidence were provided to each of the parties.

4.4 The draft determination was sent to the parties on 24 November 2006. The draft determination was issued for comment and for the parties to agree a date when all the building elements installed in the house, apart from items that have to be rectified as described in paragraph 6.3.1 complied with the Building Code Clause B2 Durability. Both parties accepted the draft citing 31 December 1998 as the time when compliance with B2 was achieved.

5. The expert's report

5.1 The expert inspected the claddings of the house on 30 October 2006, and furnished a report that was completed on 14 November 2006. The expert noted that the cladding is well fixed and aligned and the paintwork appears sound and evenly applied, with no evidence of flaking or staining. In the expert's opinion, the sheet layout is in accordance with the manufacturer's instructions and the correct control joints are installed. The expert removed the cladding at one window jamb/sill junction to observe the construction. I am prepared to accept that the exposed detail would apply to other similar situations.

5.2 The expert took both internal and external non-invasive moisture readings throughout the building, together with 19 invasive readings and no elevated readings were recorded.

5.3 The expert made the following specific comments on the cladding:

- There is cracking, which ranges from hairline to more severe, at certain locations, which the expert put down to differences of the coefficient of expansion and contraction of the materials involved.
- The base of the cladding is too close to the ground at the east and south elevations of the garage. However, the tar-sealing adjacent to these walls has an adequate fall away from the building.
- The cladding is not protected behind the gutters and the apron flashing/wall junction is silicone sealed only. This location is well protected by the 600mm eaves projections.
- The head flashings of the external joinery units are cut flush with the jamb lines and the units lack jamb and sill flashings and there is no Inseal 3190 at the unit perimeters. However, the silicone sealant was applied prior to the units being installed.
- The garage door opening lacks a head flashing.

- Some penetrations through the cladding lack flanges.

5.4 Copies of the expert's report were provided to each of the parties on 14 November 2006. The applicants replied in a letter dated 25 November 2006, saying they were "very happy" with the report but outlined some issues with regard to the flashing extensions over the external joinery installation.

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 this house are code compliant.

However, in making this comparison, the following general observations are valid:

- 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 the house:

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.

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

- is built in a high wind zone
- is single storey
- is relatively simple in plan and form
- has 600mm wide eaves projections
- has no decks or balconies
- has 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 the house 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.

6.3 Weathertightness performance

6.3.1 Generally the cladding appears to have been installed in accordance with good trade practice. However, I accept the expert's opinion that remedial work is necessary in respect of the following:

- The cracking in the cladding at certain locations particularly in the east, north and west elevations.
- The lack of cladding protection behind the gutters and the inadequately finished apron flashing/wall junction.
- The need to ensure all penetrations through the cladding are well sealed, possibly including fitting flanges over water tap penetrations.
- Any other building elements associated with the above that are consequently discovered to be in need of rectification.

6.3.2 The expert has noted that the base of the cladding is too close to the ground at the east and south elevations of the garage. However, I accept that, as the tar-sealing adjacent to these walls has an adequate fall away from the building, this clearance does not require rectification.

6.3.3 Notwithstanding the fact that the cladding is fixed directly to the timber framing, thus limiting drainage and ventilation behind the cladding, I have noted certain compensating factors that assist the performance of the cladding in this particular case:

- Apart from the noted exceptions the cladding is installed to good trade

practice.

- The house is single storey.
- The house has 600mm wide eaves projections that provide good protection to the cladding below them.
- The house has no attached decks or balconies.

6.3.4 I consider that these factors help compensate for the lack of a drained cavity and can assist the building to comply with the weathertightness and durability provisions of the Building Code.

7 Conclusion

7.1 I consider that the expert's report establishes there is no evidence of external moisture entering the building, and accordingly, that its monolithic cladding does comply with clause E2 at this time.

7.2 However, the building is also required to comply with the durability requirements of clause B2. Clause B2 requires that building elements continue to satisfy all the performance requirements of the Building Code for specified periods, and that includes the requirement for a building to remain weathertight. Because the cladding faults on the building are likely to allow the ingress of moisture in the future, the house does not comply with the durability requirements of clause B2.

7.3 I conclude that, because the faults identified with the cladding system occur in discrete areas, I am able to conclude that satisfactory rectification of the items outlined in paragraph 6.3.1 will result in the building remaining weathertight and in compliance with clause B2. I have given further consideration to the question of B2 compliance under matter 2 of this determination.

7.4 It is emphasized that each determination is conducted on a case-by-case basis. Accordingly, the fact that a particular cladding system has been established as being code compliant in relation to a particular building does not necessarily mean that the same cladding system will be code compliant in another situation.

7.5 Effective maintenance of claddings (in particular monolithic cladding) is important to ensure ongoing compliance with clauses B2 and E2 and is the responsibility of the building owner. Clause B2.3.1 requires that the cladding be subject to "normal maintenance", however that term is not defined in the Act.

7.6 I take the view that normal maintenance is that work generally recognised as necessary to achieve the expected durability for a given building element. With respect to the cladding, the extent and nature of the maintenance will depend on the material, or system, its geographical location and level of exposure. Following regular inspection, normal maintenance tasks should include but not be limited to:

- where applicable, following manufacturers' maintenance recommendations
- washing down surfaces, particularly those subject to wind-driven salt spray

- re-coating protective finishes
- replacing sealant, seals and gaskets in joints.

7.7 As the external wall framing of the building may not be treated to a level that will resist the onset of decay if it gets wet, periodic checking of its moisture content should also be carried out as part of normal maintenance.

Matter 2: The durability considerations

8 Discussion

- 8.1 The territorial authority has concerns about the durability, and hence the compliance with the building code, of certain elements of the building, taking into consideration the completion of the building by July 2001. I also note that the territorial authority's inspection records indicate compliance with clause B2 at the time of those inspections.
- 8.2 According to the applicants the house was virtually completed by early July 2001. On 5 July 2001, an officer of the territorial authority visited the site and was prepared to undertake a final inspection. However, the builder considered that this inspection should take place two weeks later. It therefore appears that the work was substantially completed in July 2001.
- 8.3 The relevant provision of clause B2 of the Building Code recognises that building elements must, with only normal maintenance, continue to satisfy the performance requirements of the Building Code for certain periods ("durability periods") "from the time of issue of the applicable code compliance certificate" (clause B2.3.1).
- 8.4 These durability periods are:
- 5 years if the building elements are easy to access and replace, and failure of those elements would be easily detected during the normal use of the building
 - 15 years if building elements are moderately difficult to access or replace, or failure of those elements would go undetected during normal use of the building, but would be easily detected during normal maintenance
 - the life of the building, being not less than 50 years, if the building elements provide structural stability to the building, or are difficult to access or replace, or failure of those elements would go undetected during both normal use and maintenance.
- 8.5 It is not disputed, and I am therefore satisfied that all the building elements installed in the house, apart from items that have to be rectified as described in paragraph 6.3.1, complied with clause B2 on 31 December 1998. This date has been confirmed by both the applicant and the territorial authority since the publication of the draft determination.

- 8.6 In order to address these durability issues, I sought some clarification of general legal advice about waivers and modifications. I have now received that clarification and the legal framework and procedures based on this clarification are described in previous determinations (for example, Determination 2006/85) and are used to evaluate the durability issues raised in this determination.
- 8.7 I continue to hold the views expressed in the previous related determinations, and therefore conclude that:
- (a) The territorial authority has the power to grant an appropriate modification of clause B2 in respect of all of the elements of the building if the applicant applies for such a modification.
 - (b) It is reasonable to grant such a modification, with appropriate notification, because in practical terms the building is no different from what it would have been if a code compliance certificate had been issued in December 1998.
- 8.8 I strongly recommend that the territorial authority record this determination and any modification resulting therefrom, on the property file and also on any LIM issued concerning this property.

9 The decision

- 9.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the cladding on the building does not comply with clause B2 of the Building Code, and accordingly confirm the territorial authority's decision to refuse to issue a code compliance certificate.
- 9.2 I also determine that:
- (a) all the building elements installed in the house, apart from the items that are to be rectified, complied with clause B2 on 31 December 1998.
 - (b) should the applicant so request, the territorial authority must modify its decision to issue the building consent to the effect that the building consent is amended as follows:

The building consent is subject to a modification to the Building Code to the effect that, clause B2.3.1 applies from 31 December 1998 instead of from the time of issue of the code compliance certificate for all building elements except those elements set out in paragraph 6.3.1 of Determination 2006/123.
 - (c) once the defects set out in paragraph 6.3.1 of this determination have been fixed to its satisfaction, the territorial authority is to issue a code compliance certificate in respect of the building consent as amended.
- 9.3 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 applicants to bring the building into compliance with the Building Code, identifying the defects listed in paragraph 6.3.1, but not specifying how those defects are to be fixed. That is a

matter for the applicants 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

- 9.4 I would suggest that the parties adopt the following process to meet the requirements of paragraph 9.3. Initially, the territorial authority should issue the new notice to fix, listing all the items that the territorial authority considers to be non-compliant. 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 20 December 2006.

John Gardiner
Determinations Manager