

Determination 2007/85

Refusal of a code compliance certificate for additions to a house at 41 Seaton Street, 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, Manager Determinations, Department of Building and Housing (“the Department”), for and on behalf of the Chief Executive of that Department. The applicants are the owners of the building, V and B Riepen (“the applicants”) and the other party is the Nelson City Council (“the territorial authority”).
- 1.2 This determination arises from the decision of the territorial authority to refuse to issue a code compliance certificate for 10-year-old additions to a house because it was not satisfied that the cladding applied to the additions complied with 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 for determination are whether:

1.3.1 Matter 1: The cladding

The claddings as installed to the addition (“the cladding”), complies with clauses B2 and 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.

1.3.2 Matter 2: The durability considerations

The elements that make up the building work comply with clause B2 “Durability” of the Building Code, taking into account the age of the building work.

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 basement addition to an existing detached house situated on a sloping site, which is in a high wind zone for the purposes of NZS 3604³. The original house was constructed in 1981 as a single storey building with conventional light timber frame construction, suspended timber-framed floors, concrete block foundation walls, weatherboard claddings and timber windows. The additions include a small extension to the upper level north corner (beneath the original roofline) with a part basement floor below that projects to the northwest by about 2.2 metres. The addition is timber-framed, with a concrete slab, foundations and retaining walls and accommodates a bedroom and bathroom areas.

2.2 The basement projection provides a new deck that opens off the extended living room above. The deck has open timber balustrades and a butyl rubber membrane floor over plywood, with spaced timber decking laid over membrane “cushions”.

2.3 The expert has noted that the external wall framing appears to be untreated Douglas fir.

2.4 The addition is clad in rusticated timber weatherboards, with timber windows and facings to match the original house.

2.5 The owner has noted that the ‘butynol’ deck membrane has a “manufacturer’s warranty of 15 years” (which I have not seen).

³ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

3. Sequence of events

3.1 It appears that the territorial authority issued a building consent number 960611 in 1996 (which I have not seen). I have received no records of inspections by the territorial authority during construction. The owner has advised that the house was completed in October 1996, and that the territorial authority had visited the house at various times between 1999 and 2001.

3.2 On 27 July 2006, a consulting engineer (“the engineer”) engaged by the applicants carried out a final structural inspection, and issued a Producer Statement – Construction Review dated 27 July 2006.

3.3 In response to a request for a code compliance certificate, the territorial authority carried out a final inspection. In a letter to the applicants dated 23 August 2006, the territorial authority explained that durability requirements commenced from the date of issue of the code compliance certificate and stated that a code compliance certificate could not be issued for the additions, noting:

As it is now approximately ten years since construction commenced it would not be appropriate for this period to be added to the durability time frames identified in the New Zealand Building Code. Nelson City Council therefore cannot be satisfied on reasonable grounds that the work now meets all the requirements of the building code, especially B2 Durability and E2 External moisture.

3.4 The Department received an application for a determination on 11 September 2006.

3.5 The Department sought further information on the matters to be determined, and the applicant subsequently asked the territorial authority for clarification. In a letter to the applicant dated 2 October 2006, the territorial authority noted that there had been variations to the deck floor that had not been approved and there was no record of the preparation of the deck membrane substrate. The territorial authority also stated:

There are no deficiencies relating to the construction of the extensions, only E2 (weathertightness) as far as B2 applies (relating to the age of the building elements) of which the Butynol roof under the deck is the major item.

3.6 In a letter to the applicant and the territorial authority dated 10 October 2006, the Department asked the territorial authority to confirm whether it would undertake a final inspection of the deck to determine the adequacy of the substructure.

3.7 In a letter to the Department dated 20 November 2006, the territorial authority noted its concerns regarding the age of the construction; and explained the structural adequacy of the deck was not in question, with its concerns relating to the replacement of compressed fibre-cement sheet with ply and butynol without inspection of the substrate.

4. The submissions

4.1 In a letter to the Department dated 5 September 2006, which accompanied the application, the applicants outlined the history of the project, explained that they understood that the building work complied in all respects except for the issue of the deck and noted that:

Several Council staff are familiar with this property and had visited the property several times between 1999 and 2001, and are likely to vouch the additions had been completed at that time. The Butynol remains in good order with little indication of age other than slight weathering on the exposed edges.

4.2 The applicant forwarded copies of:

- some of the drawings
- photographs of the extension
- the correspondence from the territorial authority
- the engineer's inspection record and producer statement.

4.3 The territorial authority made no submission (refer paragraph 3.7).

4.4 Copies of the applicant's submission were provided to the territorial authority, which made no submission in response.

4.5 The draft determination was sent to the parties on 11 May 2007. The draft was issued for comment and for the parties to agree a date when the building elements in the addition complied with Building Code Clause B2 Durability.

4.6 Responses to the draft were received from the applicant on 23 July 2007 and from the territorial authority on 2 August 2007. Both parties accepted the draft. However, the applicant submitted that compliance with B2 was achieved on October 1996, whereas the territorial authority submitted that compliance with B2 was achieved on 31 December 1996. The 3-month difference in the dates is not significant and I am of the opinion that it is reasonable to accept the date of 31 December 1996, nominated by the territorial authority, as it is the more conservative of the two dates proposed.

5. The expert's report

5.1 As mentioned in paragraph 1.4, I engaged an independent expert to provide an assessment of the condition of those building elements subject to the determination. The expert is a member of the New Zealand Institute of Building Surveyors.

5.2 The expert inspected the additions on 17 April 2007 and furnished a report that was completed on 19 April 2007. The expert noted that in general (apart from the items outlined in paragraph 5.5) the weatherboards appear to be in sound condition and the workmanship is of good quality. The expert noted that the timber decking was laid over butynol "cushions", which protected the underlying membrane surface.

- 5.3 The expert noted that the timber windows were bordered by timber facings, with metal head flashings above the top facing and the jamb facings butting against the timber window sills. The jamb facings extended to the top of the head facing (with vertical butt joints between) and timber plugs are inserted between the side facings and the weatherboards. Plugs are also used at the corner facings. The expert removed a jamb facing, and noted that no jamb flashings had been installed (which he noted were not required at the time of construction).
- 5.4 The expert took non-invasive moisture readings internally around the house and no significant variation in readings, indicative of localised moisture entry, was recorded. Subsequently, 3 invasive moisture readings were taken at the deck and a window with similar results.
- 5.5 Commenting specifically on the cladding, the expert noted that:
- the ground clearances are inadequate – with parts of the lowest weatherboard below ground in some areas. The bottom weatherboard on the northwest wall is decayed in some areas (although this is limited to where the board is against the concrete retaining wall)
 - the paintwork is in poor condition, particularly on the windows, with flaking paint and cracks in the timber facings
 - the top and bottom of the corner facings are poorly weatherproofed – with the board butted against the lower concrete retaining wall with no a flashing
 - the vertical butt joints in the window facings are unsealed and the timber is cracking, allowing water entry at the joint. The nails fixing the facings are not galvanised, and are corroding. The jamb facings butt against the timber sill, with junctions inadequately sealed (with expanded foam and “builders bog”)
 - the timber glazing beads are opening at the joints
 - the head flashing above a door lacks an adequate turndown at one end with the sawcut accommodating the end projection unsealed against water entry
 - the butynol at the deck shows signs of stress at the edges, and lacks a drip edge turning down with an inadequate overlap over the fascia. The butynol downturn is poorly-adhered and able to be easily peeled away from the timber
 - the junctions of the butynol deck edges with the walls are poorly weatherproofed, with framing exposed under the poorly-adhered butynol
 - the butynol flashings at the bottom of the balustrade posts are deteriorating
 - a downpipe bracket is not secured.
- 5.6 The expert also commented on changes to the consented plans that require some action by the territorial authority in relation to the original building consent:
- The change in the deck floor material.
 - The omission of the deck canopy.
- 5.7 Copies of the expert’s report were provided to each of the parties on 24 April 2007.

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 Solution, 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 determinations⁴ (for example, Determination 2004/1) 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 addition:

- is built in a high wind zone
- is two storey in part
- is simple in plan and form
- has no effect on the original roof
- has a deck, with open balustrades, situated above basement areas
- has external wall framing that is not treated to a level that provides resistance to the onset of decay if the framing absorbs and retains moisture.

⁴ Copies of all determinations issued by the Department can be obtained from the Department's website.

- 6.2.2 The house has been evaluated using the E2/AS1 risk matrix. The risk matrix allows the summing of a range of design and location factors applying to a specific building design. The resulting risk rating can range from 'low' to 'very high'. The risk rating is applied to determine what claddings can be used on a building in order to comply with E2/AS1. Higher levels of risk will require more rigorous weatherproof detailing; for example, a high risk level is likely to require particular types of cladding to be installed over a drained cavity.
- 6.2.3 I note that, in order to comply with the current edition of E2/AS1, the weatherboard cladding to this addition would not require a drained cavity.

6.3 Weathertightness performance

- 6.3.1 Generally the cladding appears to have been installed in accordance with good trade practice. However, based on the expert's opinion, I accept that remedial work is necessary in respect of the following:
- The inadequate ground clearances beneath the weatherboards, and the decayed bottom weatherboard.
 - The flaking paintwork, and cracked timber window facings.
 - The inadequate weatherproofing at the tops and bottoms of the corner facings.
 - The inadequately sealed vertical joints at the junctions of the jamb facings with the head facings.
 - The corroded ungalvanised nails in the facings and the poorly sealed jamb facing to window sill junction.
 - The junctions of the glazing beads.
 - The lack of turndown and weatherproofing at one end of a head flashing.
 - The inadequate weatherproofing of the butynol at the edge of the deck and at the junction with the 2-storey walls.
 - The deteriorated butynol flashings at the bottom of the balustrade posts.
 - The unsecured downpipe bracket.
- 6.3.2 I also note the changes to the consented plans that require some action by the territorial authority:
- The deck changed from sealed compressed fibre-cement sheet to a membrane on plywood.
 - The omission of the deck canopy.

Matter 1: The cladding

7. Discussion

- 7.1 I consider that the expert's report establishes there is no evidence of external moisture entering the addition, and accordingly, that its cladding does comply with clause E2 at this time.
- 7.2 However, the addition is also required to comply with the durability requirements of clause B2. Clause B2 requires that a building continues to satisfy all the objectives of the Building Code throughout its effective life, and that includes the requirement for the house to remain weathertight. Because the cladding faults on the addition are likely to allow the ingress of moisture in the future, the addition does not comply with the durability requirements of clause B2.
- 7.3 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 addition remaining weathertight and in compliance with clauses B2 and E2.
- 7.4 Effective maintenance of claddings is important to ensure ongoing compliance with clauses B2 and E2 of the Building Code and is the responsibility of the building owner. Clause B2.3.1 of the Building Code requires that the cladding be subject to "normal maintenance", however that term is not defined in the Act.
- 7.5 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.
- 7.6 As the external wall framing of the addition 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 addition, taking into consideration the completion of most of the building work by October 1996. (However I note that

I have received no copies of inspection records to verify compliance with clause B2 in 1996.)

8.2 Reviewing all the information before me, and notwithstanding the lack of evidence referred to in paragraph 8.1, I am satisfied that all the building elements installed in the addition, apart from items that have to be rectified as described in paragraph 6.3.1, complied with clause B2 on 31 December 1996. The establishment of this date is discussed in paragraph 4.6.

8.3 The relevant provision of clause B2 of the Building Code requires 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 In order to address these durability issues when they were raised in previous determinations, I sought and received clarification of general legal advice about waivers and modifications. That clarification, and the legal framework and procedures based on the clarification, is described in previous determinations (for example, Determination 2006/85). I have used that advice to evaluate the durability issues raised in this determination.

8.6 I continue to hold that view, and therefore conclude that:

- (a) the territorial authority has the power to grant an appropriate modification of clause B2 in respect of the building elements in the addition.
- (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 for the additions had been issued in 1996.

8.7 I strongly recommend that the territorial authority record this determination and any modifications resulting from it, 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 additions to this house do not comply with clauses E2 and 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 under the building consent, apart from the items that are to be rectified, complied with clause B2 on 31 December 1996.
- (b) the building consent is hereby modified 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 1996 instead of from the time of issue of the code compliance certificate for all building elements except those elements which have been altered or modified as set out in paragraph 6.3.1 of Determination 2007/85.
- (c) once all the defects have been fixed to its satisfaction, the territorial authority is to issue a code compliance certificate in respect of that consent as amended.

9.3 I note that the territorial authority has not issued a notice to fix. 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, and any associated defects discovered in the course of that work 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 notice to fix. The owner should then produce a response to this notice in the form of a technically robust proposal, produced in conjunction with advice from 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 14 August 2007.

John Gardiner
Manager Determinations